NEW BEDFORD
TEXTILE INSTITUTE

CATALOGUE
1953-1955

NEW BEDFORD, MASSACHUSETTS

New Bedford Textile Institute

A College of Textiles and Engineering

NEW BEDFORD, MASSACHUSETTS

Bachelor of Science

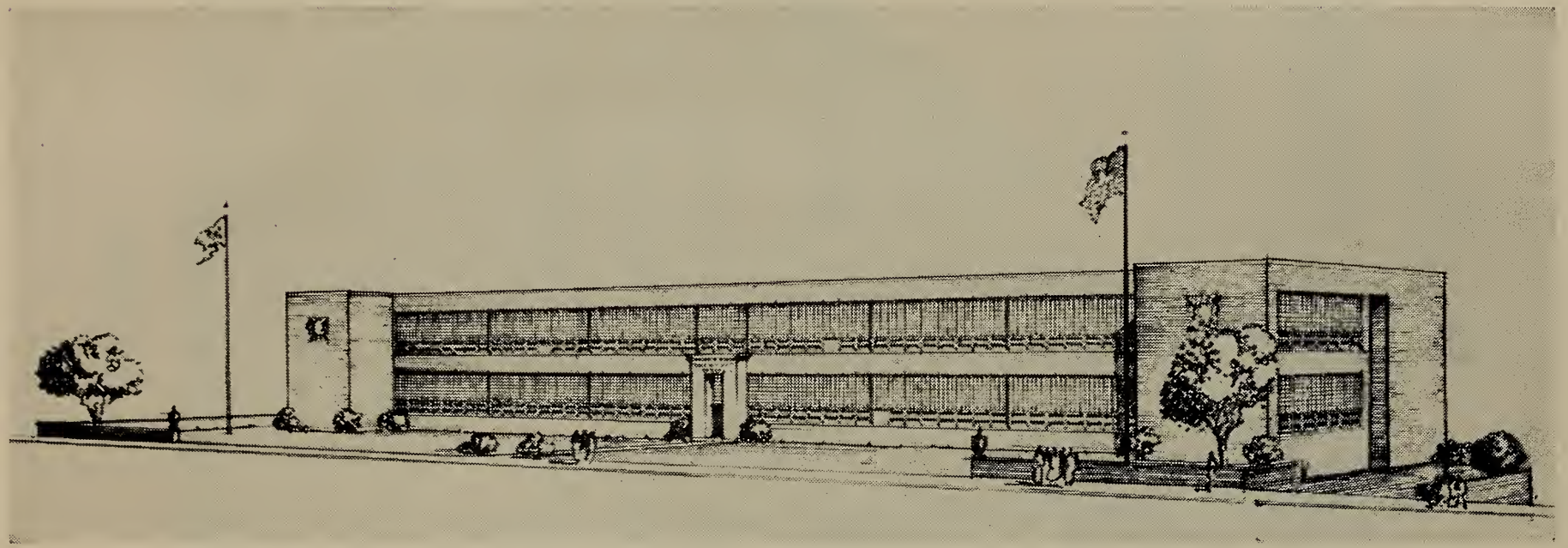
Textile Engineering

Textile Chemistry

Machine Design

CATALOGUE

1953-1955



Proposed Addition

Administration and Staff

ENTRANCE

Board of Trustees
Administrative Officers
Instruction Staff

NEW BEDFORD TEXTILE INSTITUTE

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Term Expires 1953

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JAMES B. MONIZ, 59 Capitol Street. Tel. 8-5378.
Marie's, 997 So. Water St. Tel. 7-9553.

Term Expires 1954

NILS V. NELSON, 8 Temple Ave., Winthrop. Tel. Ocean 3-2630. Office: N. V. Nelson Co. Cotton, 93 Federal St., Boston. Tel. Lib. 2-7917, Summer Home: Osterville, Tel. Osterville 857.

JOHN A. SHEA, 384 Washington St., Taunton. Tel. Taunton 4-8746. Summer Home: Cataumet. Tel. Cautaumet 632R.

PHILIP MANCHESTER, SR., Westport Harbor, Mass. Tel. Westport Harbor 477. Berkshire Fine Spinning Inc., King Phillip A. Division., 941 Grinnell St., Fall River, Mass. Tel. Fall River 6-8231.

GEORGE E. CARIGNAN, *Director,* N. B. Joint Board Textile Workers Union of America, C.I.O. Tel. 7-9367. Home: 386 Union Street. Tel. 4-8965.

MISS E. FERRIS ALMADA, 6 Ocean Street, New Bedford. Tel. 2-7738. Gosnold Mills, Inc. Tel. 7-9406.

Term Expires 1955

JOHN VERTENTE, Jr., 67 Mechanics Lane, New Bedford. Tel. 2-5590. Office: Tel. 2-2002.

ALBERT MEDEIROS, 60 Independent St., New Bedford. Tel. 2-9575.

LAURENT FAUTEUX, 241 State St., New Bedford. Tel. 3-7751. Cape Cod Bag Co., 1357 Rodney French Blvd. Tel. 4-8720.

DENNIS J. MURPHY, Exchange St., Millis, Mass. Tel. 246.

RAYMOND R. McEVOY, 156 Porter St., Stoughton. Tel. Stoughton 78. U. S. Civil Service Commission, Office of Director, Federal Bldg., Room 1050, Boston, Mass. Tel. Lib. 2-5600.

ADMINISTRATION

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Cecilia Zeitler, *Senior Clerk*
Estelle M. Dowd, *Junior Clerk and Typist*
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James L. Giblin, *Director of Placement*
Leo M. Sullivan, *Director of Bookstore*

OFFICERS OF INSTRUCTION

Francis Tripp,
Dean of the Faculty and Director of Admissions
Agustus Silva,
Dean of Students

DEPARTMENTS OF INSTRUCTION

Department of Chemistry, Dyeing and Finishing

Francis Tripp, B.S. in Ch.E., M.S., Ch.E.
Professor of Chemistry and Head of Department
John C. Broadmeadow, B.S., in Ch.E.
Associate Professor of Chemistry
Edmund J. Dupre, B.S. in Chemistry, M.S. in Chemistry
Associate Professor of Chemistry
Louis E. F. Fenaux, B.S. in Chemistry, M.S. in Chemistry
Associate Professor of Chemistry
Ferdinand P. Fiocchi, B.S.
Instructor in Chemistry

DEPARTMENT OF ENGINEERING

Howard C. Tinkham, M.E.
Assistant Professor of Machine Design and Acting Head of Department

Division of Machine Design

Adam Bayreuther
Assistant Professor of Tool Manufacturing
John R. Barylski
Instructor in Engineering Drawing
Louis E. F. Fenaux, B.S., M.S.
Instructor in Metallurgy

Division of Mathematics and Physics

Warren Holt, B.S.
Instructor in Mathematics and Physics
Lenine Gonsalves, B.S.
Instructor in Electrical Engineering
Lawrence Sylvia, B.S.
Instructor in Mathematics and Physics

Division of Humanities

DEPARTMENT OF ENGLISH

Augustus Silva, B.A., M.A.
Assistant Professor of English and Acting Head of Department

DEPARTMENT OF HUMANITIES

Leo M. Sullivan, B. S., M. A.
Assistant Professor of Social Sciences and Acting Head of Department

DEPARTMENT OF TEXTILES

James L. Giblin
Professor and Head of Department

Division of Yarn Manufacture

Frank Holden
Associate Professor and Division Head

Louis Pacheco, Jr., B.S. in T.E., M.Ed.
Assistant Professor of Carding and Spinning

William S. Kirk
Instructor in Carding and Spinning

Division of Weave Formation and Cloth Analysis

James L. Giblin
Professor of Weave Formation

Antone Rodil
Assistant Professor of Weave Formation

Nancy Allen, B.F.A.
Instructor in Art and Design

John Regan, B.A.
Instructor in Weave Formation

Division of Knitting

Edward H. Cloutier
Associate Professor and Division Head

Division of Physical Testing

Clifford N. Beck, B.S. in T.E.
Instructor in Microscopy and Physical Testing

Division of Weaving

Fred Beardsworth
Associate Professor and Division Head

Antone Rodil
Assistant Professor of Weaving

Richard Molynaux
Instructor in Weaving

John Regan, B.A.
Instructor in Weaving

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James L. Giblin, *Secretary*
Louis E. F. Fenaux, *Treasurer*
Fred Beardsworth, *Faculty Member*
Philip Manchester, Sr., *Trustee Member*
John E. Foster, *President of the Institute*

Coaches

Fred Beardsworth, *Soccer Coach*
Clarence "Clarry" Haskell, *Baseball and Football Coach*
Francis Tripp, *Basketball Coach*

FOREWORD

The purpose of this issue of the Catalogue is to provide information for prospective students, or anyone else who may be interested, regarding the history, traditions, objectives, resources, programs, equipment and staff of the Institute.

General Information

History

College Facilities

Student Organizations

Admissions

Graduation Requirements

Attendance Regulations

Expenses

Scholarships

Athletics

NEW BEDFORD TEXTILE INSTITUTE

1898-1953

The New Bedford Textile Institute was established and incorporated by the Board of Trustees of the New Bedford Textile School on August 1, 1895, under Chapter 475 of the Acts of 1895 of the Commonwealth of Massachusetts.

The first meeting of the Board of Trustees was held on January 27, 1896 and committees were appointed to supervise activities with relation to building, finance, machinery, education and other necessary executive functions. During the year 1897 the city of New Bedford appropriated $25,000 for the use of the school and the Commonwealth of Massachusetts appropriated an additional $25,000 the following year. With these funds the first of the present five buildings was constructed.

The first building, consisting of three stories and a basement, comprised about 22,000 square feet of floor space. During the first 25 years of the school's existence, four buildings were added; three in the form of additions and one, the recitation building, a separate structure, was connected to the others by an overpass and tunnel.

The General Court of Massachusetts in 1950 appropriated $750,000 to be used in expanding the Institute's classroom and laboratory facilities. After numerous unavoidable delays, ground will be broken for it during the coming year.

The present Institute has approximately 110,000 square feet of floor space. It is one of the most modern and best-equipped institutes in the world.

The first course offered by the Institute was entitled, "General Cotton Course." In 1902, two additional courses in Knitting and Chemistry were offered. A mechanical engineering department was added in 1905. This department offered courses in mechanical drawing, machine shop practice, shop mathematics, mechanics, electricity and steam. These courses at first were offered only in conjunction with the general cotton course. Later, a separate course in Junior Mechanical Engineering was offered and it was from this beginning that the present engineering department evolved.

Today the following courses of study are offered:

Degree Courses — 4 years
- Bachelor of Science in Textile Chemistry
- Bachelor of Science in Textile Design and Fashion (Tentative)
- Bachelor of Science in Textile Engineering
  - Textile Engineering Option
  - Textile Manufacturing Option
- Bachelor of Science in Machine Design

Diploma Courses — 3 years
- General Textile Manufacturing
- Textile Designing
- Chemistry, Dyeing and Finishing
- Knit Goods Manufacturing

Certificate Courses — 2 years
- Textile Technology
- Drafting and Machine Shop Practice

Along with the development and expansion of the curricula, there has been an almost complete renewal of equipment and a modernization of working facilities, *i.e.*, laboratories, lighting, etc. It is estimated that during the past ten years approximately 450,000 dollars have been spent for new equipment and modernization.

At the present time, extensive additions to the school plant are being planned. The Commonwealth of Massachusetts has recently appropriated funds toward the

purchase of considerable property adjoining the institute. Engineers are now working on tentative plans for a large addition which will house more laboratories and a modern library.

The New Bedford Textile Institute is proud of its professional standing and of the recognition it receives throughout the world. This recognition is evidenced by the large number of foreign students who attend each year. The current enrollment consists of students from approximately fifteen states and twelve foreign countries. Among the latter are France, Palestine, Chile, Bolivia, Mexico, Canada, China, Haiti, Egypt, Brazil and Greece.

ENVIRONMENT

The Institute is situated in the city of New Bedford, Massachusetts. It is located along the main bus line; both the bus terminal and railroad station are within walking distance.

New Bedford, being an industrial city is an especially suitable location for a school of this type. For many years it has been recognized as the world's largest manufacturer of fine cotton yarns and fancy fabrics. In recent years the industry of this city has become more diversified. Many new industries have found New Bedford, with its skilled manpower, particularly suited to their type of work. These industries include the world's largest manufacturers of electronic equipment along with an important manufacturer of condensers. One of the world's most important manufacturers of rubber equipment has long been established here and more recently a leading manufacturer of machine tools has migrated to this industrial city.

Textile, machine tool and rubber manufacturing or processing do not constitute the whole of New Bedford's diversified industry. This historical city has long been recognized as a leading fishing port. Each year, millions of dollars worth of fish are brought into this port, either for direct shipment or for New Bedford's large fish processing houses.

These industries, both old and new, afford the Institute many opportunities for planned inspection trips. This, we feel, is an invaluable aid in acquainting the student with the practical phases of his academic work.

Students wishing to remain in New Bedford during the summer recess will find many opportunities to work during this period. Because of the nature of the city's industry, the student often finds work which is in his chosen field, thereby gaining practical experience as well as financial aid to meet the expenses incurred during the school year.

The civic center of New Bedford is a few minutes walk from the school grounds. Here the student will find the municipal building, the main library, veterans administration building and many other city and county buildings. Close to the civic center he will find the city's largest shopping and theater district.

COLLEGE FACILITIES

Library

The institute maintains a main library and several small departmental libraries. The present main library contains approximately 4,000 volumes, all of which pertain, for the most part, to textile manufacturing, chemistry and general engineering. Present plans call for a library in the new addition to house a minimum of 15,000 volumes.

Each of the smaller departmental libraries contain volumes pertaining to the work of each particular department. Included among these are bound volumes of some twenty publications which are received monthly. These volumes make a very important reference for those students engaged in research.

The students also have access to the New Bedford Public Library. This library contains a very comprehensive collection of about 25,000 volumes. All courses offered at the institute require the student to make full use of all these facilities.

Bookstore

The institute maintains a bookstore on the second floor of the administration building. This store is operated on a non-profit basis. All supplies, books, etc., are sold at very little above cost — this difference covering the cost of maintaining the store.

The student will find all the supplies he needs in this bookstore. Although the student is not required to purchase these supplies, he is advised not to buy elsewhere until he is certain those things he will buy are approved by the person in charge of the course in which the equipment is to be used. All supplies in the book store are approved.

STUDENT ORGANIZATIONS

Student Council. This is a body consisting of elected representatives from each of the twelve classes, and one faculty representative. Its purpose is to study problems of the student body, class activities and the various matters of student organizations. This body represents the student body in proposing changes or making recommendations to the college authorities.

Interfraternity Council. An organization consisting of members representing each of the men's and women's fraternities. One member is chosen from the faculty. This body determines the rushing season and the rules which control rushing. It has charge of enforcement of all institute rules regarding membership in fraternities.

Fraternities. There are three national, professional and social men's fraternities and one women's sorority. These are

Phi Psi Delta Kappa Phi Sigma Tau Phi

The women's sorority is: Phi Zeta Sigma. These fraternities maintain chapter rooms and all play a major part in the social and athletic affairs of the institute.

Athletic Council. This is a body consisting of representatives of the Board of Trustees and representatives of the faculty. The purpose of this group is to determine all athletic policies. The athletic council determines the budgets for each sport and all schedules must meet their approval.

ADMISSIONS

Entrance Requirements for All Degree Courses

The Institute will accept for admission to the freshman class graduates of recognized high schools having 15 high school credits.

Degree Courses

Subjects required for entrance

1. Prescribed 7 units
   - English — 3 units
   - Algebra — 1 unit
   - Geometry — 1 unit
   - U. S. History — 1 unit
   - Lab. Science — 1 unit
2. Optional units
   - Mathematics — unlimited
   - Science — unlimited
   - Social Studies — not more than three
   - Foreign Language — not more than three
   - Other high school credits — varied and subject to evaluation by the faculty committee on admissions.

Diploma and Certificate Courses

The number of students admitted to these courses will be limited according to the number of degree students admitted.

Requirements for entrance:

All applicants must have a high school diploma or its equivalent.

Subjects required for entrance will be determined by the courses to be taken.

All applicants must present with their application a certified transcript of their secondary school record.

Advanced Standing

Applicants will be admitted to advance standing if the following conditions are fulfilled:

The Faculty Committee on admissions must be satisfied that his secondary school record meets the entrance requirements of the institute.

He must present a certified transcript of the work completed at the previous college.

He must have completed all work required of those classes previous to the class in which he wishes to enter.

He must show that work completed at the previous institution is equivalent to that given at this institution.

A minimum of two years resident study must be completed at this institution in order for the applicant to receive a degree.

GRADUATION REQUIREMENTS

1. Requirements

The requirements for graduation are the satisfactory completion of all courses in one of the prescribed curricula of the Institute, with a total of credit hours not less than the minimum number of credit points required in the individual curriculum.

2. Grading System

The following grading system shall be used in determining the above:

A. Excellent, 90-95
B. Good, 80-90
C. Passing, 70-79
D. Passing without credit points, 60-69
F. Failure, below 60
Abs. Absent from examination
Inc. Incomplete. Cannot be given unless student has average "C" on the course
Wi. Withdrew officially from course
"Dropped." Dropped without permission or after final date

3. Explanations

a — A student absent from a final examination shall be required to make up the examination within thirty (30) days. The date for the examination in such a case will be left to the instructor's discretion.

b — "Incomplete" indicates that the student has had an average of "C" or above, but has not completed the work specified for the course, has been allowed an extension of time by the instructor. The grade of "Incomplete" must be replaced by a regular grade the next time the course is given during the student's residence, or the "Incomplete" will become a "Failure" "Fi."

c — A grade of "Fd" is posted if the instructor reports a student has dropped a course for which he was scheduled. The student may not have dropped the course officially or he may have dropped it after the final date for dropping courses.

d — A "Failure" may be made up only by repeating the subject. Such a repeat course may be regularly scheduled on the students roster.

e — A student is to be marked late if he enters any class period (lecture or laboratory) before one-third (⅓) of the period has elapsed. If he enters after one-third (⅓) of the class period has elapsed he is to be marked absent.

4. Credits and Averages

The Institute operates on the credit-point system. Term credits represent the number of hours of work completed successfully; credit points are determined by the grade earned; (A) 3 credit points for each credit hour; (B) 2 credit points for each credit hour; (C) 1 credit point for each credit hour. A student is not required to repeat a subject in which a grade of D is obtained; he receives, however, no credit points to be counted toward the minimum number required for graduation. In order to be granted a degree, a student is required to have a minimum number of credit points equivalent to the number of credit hours required for graduation in his curriculum. In other words, he must obtain an overall average of Q or 1.00.

a — Standing for any period of time is the result obtained by dividing the number of credit points received by the student by the number of credit hours for which he was registered.

b — Transfer credits and points are not included in scholastic averages.

c — Grades of absent count as failures. Grades of incomplete do not count at all.

d — The roster of the student's courses, duly approved, and copies filed with the Dean of Students, must contain every subject for which the student is allowed credit.

e — No student may exceed a load of credit hours greater than that listed for his curriculum without the aproval of the Dean of Students; nor may he schedule less without the approval of the Dean of Students.

5. Dean's List

A student who at the end of a semester has a high scholastic standing will be placed on the Dean's List. This list will be posted on the official bulletin boards.

6. Degrees with Distinction

With highest distinction
With high distinction
With distinction

7. Attendance Regulations

Daily attendance records are to be kept by the instructor in charge of each lecture or laboratory class. For each semester, a student is allowed three (3) credit-hour absences from each lecture or laboratory class. One (1) lecture hour is equivalent to one (1) credit-hour; two (2) laboratory hours is equivalent to one (1) credit-hour; that is, a student is allowed to absent himself from three (3) lecture hours or six (6) laboratory hours in any one course for each semester. Any student exceeding three (3) credit-hours absences from any one class (lecture or laboratory) will be reported to the Dean of Students. Any credit-hour absence immediately preceding or succeeding a holiday will be equivalent to two (2) credit-hour absences. All instances of unreasonable tardiness will also be reported to the Dean of Students.

EXPENSES, TUITION AND FEES

The tuition for all courses varies according to the residential status of the student. For residents of Massachusetts, the rate is one hundred dollars per year, for residents of other states, the fee is two hundred and fifty dollars. The rate for all foreign students is five hundred dollars.

All students pay a registration fee of two dollars and fifty cents.

Students majoring in chemistry pay a laboratory fee of ten dollars. Those students majoring in Textile Engineering or machine design pay a laboratory fee of five dollars. In addition to these laboratory fees, all non-residents of Massachusetts must pay a ten dollar fee for chemicals.

All students are assessed a $10.00 athletic fee.

The cost of books and supplies varies with the type of course and the year in

which it is taken. This cost is more emphasized during the first year and less emphasized during the remainder of the instructional program. The cost varies from approximately fifty dollars to one hundred dollars per year depending, of course, on the aforementioned factors.

Under the prevailing conditions it is impossible to estimate the living costs for students. There are many variable factors and much depends on the standard of living of the student.

ENDOWMENTS AND SCHOLARSHIPS

The New Bedford Textile Institute is wholly supported by the Commonwealth of Massachusetts and has no endowments.

There are four scholarships offered and controlled by the school authorities. There are also available about ten other scholarships which are controlled elsewhere. Those which are controlled by the school authorities are as follows:

William Firth Scholarship Fund:

A 3,000 dollar fund deposited in the New Bedford Five Cents Savings Bank. Only the interest of this fund may be used for scholarships.

The Manning Emery, Jr., Scholarship Fund:

A 3,000 dollar fund deposited in the New Bedford Institution for Savings Bank. Only the interest may be used for scholarships.

The Neuss, Hesslein & Co. Scholarship Fund:

A 5,000 dollar fund set up by the Neuss, Hesslein and Co. of New York City. This is a recent contribution and no action has yet been taken in regard to the scholarships to be awarded.

Everett H. Hinckley Scholarship:

This is an annual award of 100 dollars made by the New York Chapter of the New Bedford Textile Institute Alumni Association. It is offered in memory of Everett H. Hinckley, former head of the Institute's Chemistry Department. The other scholarships which are offered and controlled elsewhere are offered by the New England Textile Foundation and the Berkshire Fine Spinning Company.

AWARDS

The National Association of Cotton Manufacturers Medal

The National Association of Cotton Manufacturers offers a medal to be awarded each year to the student in the Textile Engineering graduating class who shows the greatest proficiency in scholarship. This is determined by an examination of all students records and the medal is awarded to that student having the highest average according to the credit point system of determining averages.

The competition for this medal is also open to all evening students who have completed the full course of study required for a degree in Textile Engineering. The association offering the medal has made it a condition of the award that at least four members of the graduating class be eligible to the competition.

The William E. Hatch Key

This award is made to the member of the freshman class of Textile Engineering, who has the highest credit point average for the year. It is awarded by the Alumni Association of the Institute, to commemorate the day of William E. Hatch's retirement from the presidency of the Institute.

The Morris H. Crompton Award

This key is awarded to the student of the graduating class of Machine Design, who has the highest four year average according to the credit point system of determining averages. It is awarded in honor of Morris H. Crompton, former head of the Department of Engineering.

The Fred E. Busby Award

This key is awarded by the Alumni Association to the student of the graduating class of chemistry, who has attained the highest four year average according to the credit point system. It is presented in honor of Fred E. Busby, former head of the Department of Chemistry.

ATHLETICS

The New Bedford Textile Institute, its administration and faculty, approve and encourage a full program of intercollegiate and intramural athletics. The Athletic Council, in cooperation with the student council plans, and provides for, the fullest possible program of inter-class and inter-fraternity sports.

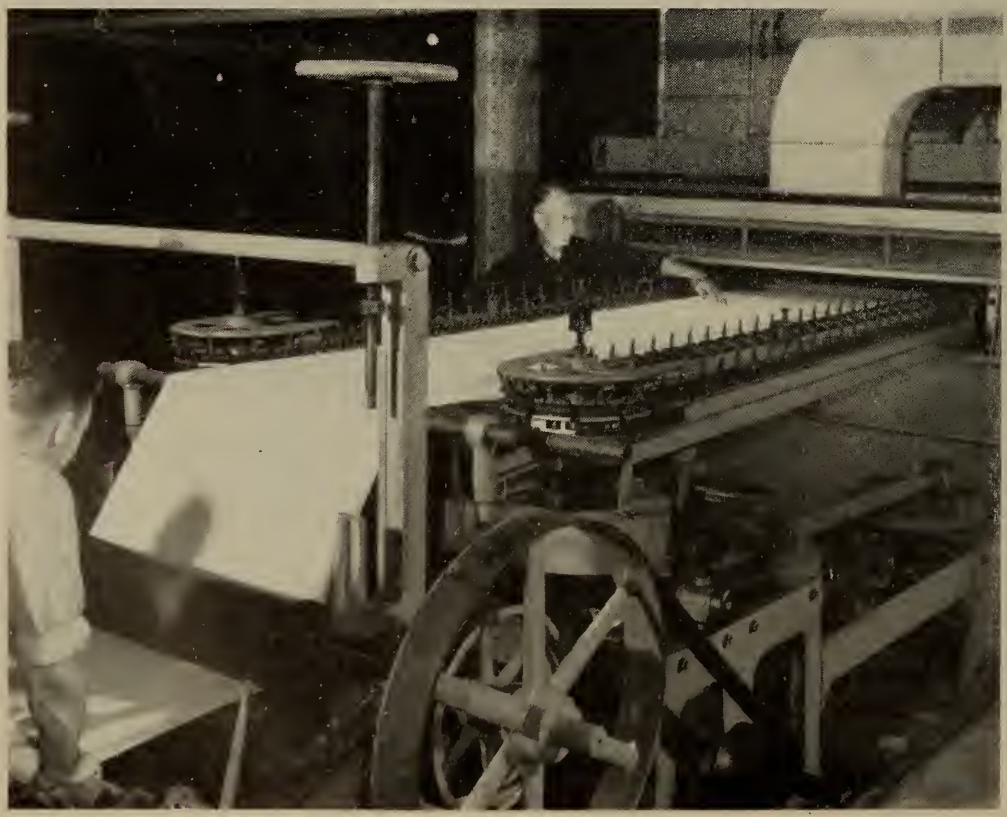
Varsity teams include football, baseball, basketball and soccer. The Institute schedules for its games, most of the recognized colleges of its athletic class. These schedules include many varied and interesting road trips.

The Faculty Committee on Rules and Regulations strictly enforce the eligibility code for membership on athletic teams. This code is based on the Institute's credit point system of determining averages. Under this system the student must have an average of 65% or better in order to take an active part in athletics.

PADDING FINISH INTO CLOTH

CHEMICAL ANALYSIS

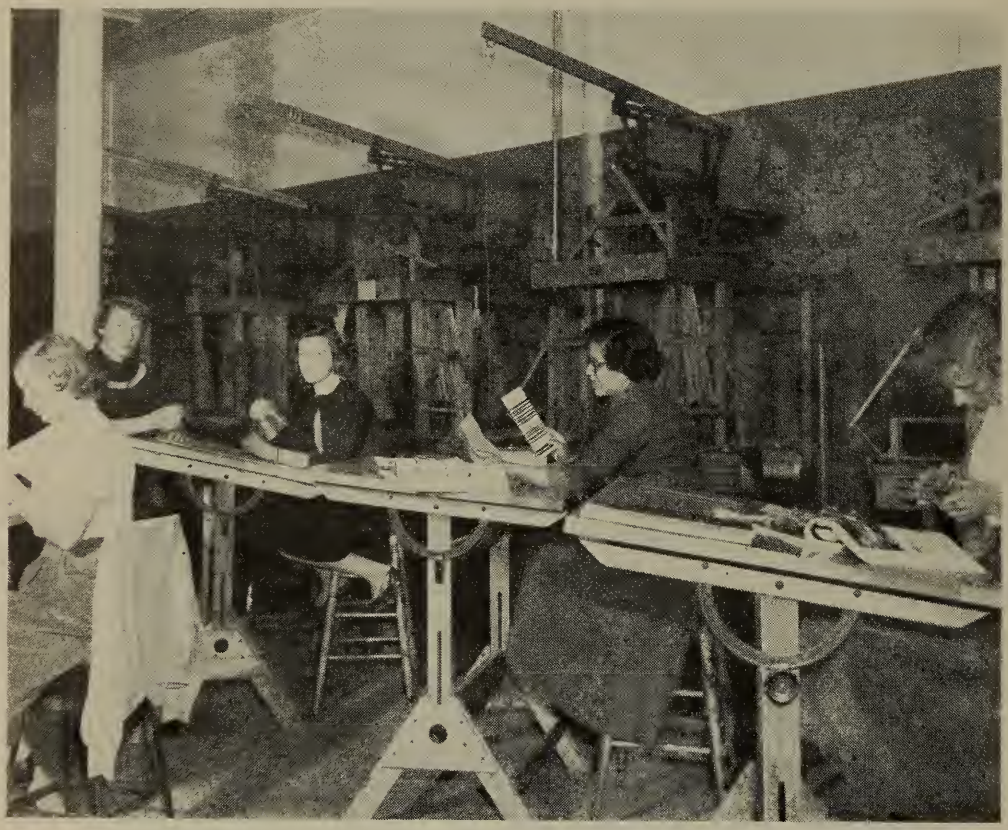
PHOTOMICROGRAPHY



TENTER FRAME

PHYSICAL TESTING OF FABRIC

KNITTING



HANDLOOM PATTERN DESIGNING

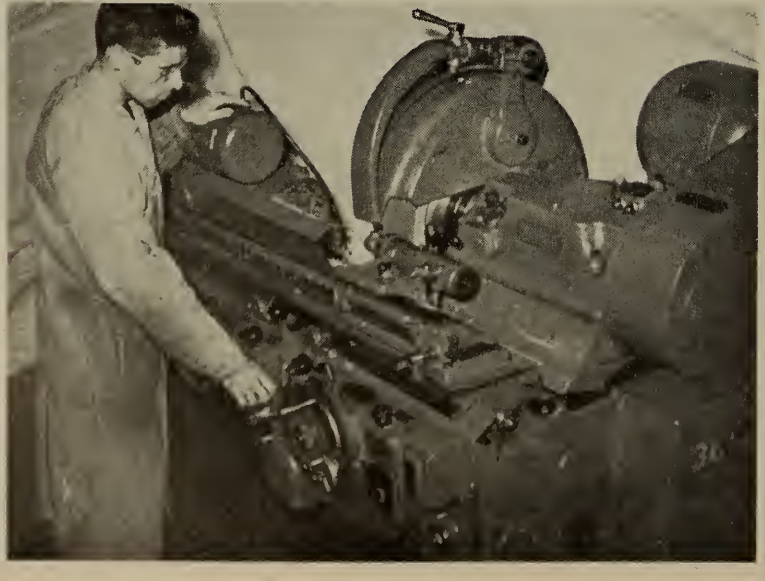
ANATOMICAL DRAWING

WEAVING

COTTON COMBING

DESIGNING

MICROSCOPY



MACHINE SHOP PRACTICE

PHYSICS LABORATORY

PHYSICS LECTURE

SCREEN PRINTING

MACHINE SHOP

COURSES OF STUDY

Degree Courses — 4 Years

1. Machine Design
2. Textile Chemistry
3. Textile Design and Fashion (tentative)
4. Textile Engineering
   a. Engineering Option
   b. Manufacturing Option

Diploma Courses — 3 Years

1. General Textile Manufacturing
2. Textile Designing
3. Chemistry, Dyeing and Finishing
4. Knit Goods Manufacturing

Certificate Courses — 2 Years

1. Textile Technology — primarily for girls
2. Drafting and Machine Shop Practice

Evening Courses

1. Carding and Spinning
2. Weaving and Designing
3. Chemistry and Dyeing

CODE TO COURSE NUMBERS

1 — Chemistry	Ch
2 — Engineering	E
3 — English	Eng.
4 — Humanities	H
5 — Mathematics	M
6 — Physics	P
7 — Textile Design and Fashion	TD
8 — Textile Engineering	TE

a. — Courses T. E. — 100	Cotton Yarn Preparation
b. — Courses T. E. — 200	Weaving
c. — Courses T. E. — 300	Weave Formation, Analysis and Physical Testing
d. — Courses T. E. — 500	Knitting

Note. All "S" courses are simplified versions of the original courses.

Bachelor of Science

Major — Textile Chemistry

Through a well balanced program of training in the fundamental sciences and the humanities, together with the practical application of the principles involved, this department trains students for careers in the chemical industries, particularly in the field of textile chemistry, dyeing and finishing.

The curriculum provides a sound fundamental training in the fields of inorganic, organic, analytical and textile chemistry. Courses in mathematics, physics, history, economics, sociology, merchandising and technical writing yield a well-rounded program which prepares the student for industrial professions or for graduate training.

Bachelor of Science

Major — Textile Chemistry

Freshman Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
M-1A&2	Algebra & Trig.	4	0	4
Ch-1	Inorganic Chemistry	3	6	6
H-2	English Composition I	3	0	3
E-8	Engineering Drawing	0	4	2
H-6	U. S. History	2	0	2
TE-318	Intro. Survey of Textiles	1	0	1
		13	10	18

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
M-1B&3	Algebra & Anal. Geom.	4	0	4
Ch-1	Inorganic Chemistry	3	0	3
Ch-2	Qualitative Analysis	2	4	4
H-2	English Composition II	3	0	3
E-9	Engineering Drawing	0	4	2
H-5	General Psychology	2	0	2
TE-354	Microscopy	1	0	1
		15	8	19

Sophomore Year

	First Term			
P-1	Physics	3	2	4
M-4A	Differential Calc.	3	0	3
Ch-3	Elem. Quantitative Analysis	2	4	4
Ch-7	Elem. Dyeing I	2	4	4
Ch-13	Organic Chemistry	2	4	4
H-1	Economics	2	0	2
TE-316	Fabric Classification	1	0	1
		15	19	22

	Second Term			
P-2	Phsyics	3	2	4
M-4B	Integral Calculus	3	0	3
Ch-4	Elem. Quantitative Analysis	2	4	4
Ch-8	Elem. Dyeing II	2	4	4
Ch-14	Organic Chemistry	2	4	4
H-1	Economics	2	0	2
TE-316	Fabric Classification	1	0	1
		15	14	22

Junior Year

	First Term			
Ch-5	Advanced Quantitative Analysis	1	6	4
Ch-9	Advanced Dyeing I	2	6	5
Ch-15	Organic Chemistry (Mfg. of Dyes.)	2	6	5
H-9	Marketing	2	0	2
TE-108	Cotton Classing	1	1	1.5
TE-109	Cotton Mfg.	1	0	1
TE-501	Knitting	1	0	1
TE-321	Testing (Physical)	1	2	2
		11	21	21.5

	Second Term			
Ch-6	Advanced Quantitative Analysis	1	6	4
Ch-9A	Advanced Dyeing II	1	6	4
Ch-20	Textile Printing	2	4	4
H-11	Sociology	2	0	2
TE-307	Color	1	1	1.5
TE-505	Knitting	1	0	1
TE-353	Microscopy	1	2	2
		10	21	20.5

SENIOR YEAR

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
Ch-10	Advanced Dyeing III	1	4	3
Ch-11	Advanced Dyeing IV	1	0	1
Ch-18	Textile Finishing	1	6	4
Ch-21	Bacteriology	1	4	3
H-3	Report Writing	2	0	2
Ch-16	Indus. Textile Chem. Analysis	1	6	4
		7	20	17

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
Ch-12	Chem. of Textile Fibers	3	2	4
Ch-17	Indus. Textile Chem. Analysis	1	6	4
Ch-19	Textile Finishing II	1	6	4
Ch-22	Textile Microbiology	1	4	3
Ch-23	Colloid Chemistry	2	4	4
H-4	Business Writing	2	0	2
		10	22	21

Total Cr. hours — 161

Bachelor of Science

Major — Machine Design

Due to the increased demand for men skilled in the field of machine design, the original two-year course in Junior Mechanical Engineering has been increased to a four-year course. The course has been greatly broadened in scope and includes many new academic and technical subjects. The addition of these new subjects, we believe, will give the student the necessary background for one who will compete in the field of Machine Design.

The student is trained thoroughly in the field of mathematics, beginning with a review of high school algebra and continuing through a practical course in applied calculus. These courses in mathematics, particularly the course in trigonometry, are designed to meet the problems ordinarily encountered by one engaged in the various fields of engineering.

Full courses in mechanical drawing, geometry of engineering drawing, mechanisms, jig, fixture and tool design are undertaken. As an aid in the better understanding and application of the principles involved in these courses, other subjects such as applied engineering mechanics, strength of materials, metallurgy, etc., are included in the curriculum.

In the past few years we have received several requests for men skilled not only in machine design but who also had a good basic knowledge of textile machinery. With this in mind we have arranged a special course in the textile division of the school, to be pursued by all taking the course in machine design. This, we believe, will train the student in the general field of machine design and also in the particular field of textile machine design.

As in the past, the student will make frequent trips to a wide variety of industrial plants, thereby gaining a first hand knowledge of actual working conditions and methods.

Bachelor of Science

Major — Machine Design

FRESHMAN YEAR

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
M-1A&2	Algebra & Trig.	4	0	4
Ch-101B	General Chemistry	2	2	3
H-2	English Comp. I	3	0	3
E-8	Engineering Drawing	0	6	3
E-1	Machine Tool Lab.	0	4	2
E-1A	Shop Theory & Calc.	1	0	1
H-6	U. S. History	2	0	2
TE-109	Cotton Manufacturing	0	2	1
		12	14	19

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
M-1B&3	Algebra & Anal. Geom.	4	0	4
Ch-101B	General Chemistry	2	2	3
H-2	English Comp. II	3	0	3
E-9	Engineering Draw.	0	6	3
E-1	Machine Tool Lab.	0	4	2
E-1A	Shop Theory & Calc.	1	0	1
H-5	General Psychology	2	0	2
TE-210	Elem. Weaving	0	2	1
		12	14	19

Sophomore Year

No.	Name	Hours Cl.	Lab.	Cr.	No.	Name	Hours Cl.	Lab.	Cr.
	First Term					*Second Term*			
P-1	Physics	3	2	4	P-2	Physics	3	2	4
M-4	Diff. Calc.	4	0	4	M-4B	Integ. Calc.	4	0	4
E-10	Eng. Draw.	0	7	3.5	E-11	Desc. Geom.	2	3	3.5
H-1	Economics	2	0	2	H-1	Economics	2	0	2
E-2	Machine Tool Lab.	0	7	3.5	E-3	Machine Tool Lab.	0	4	2
E-2A	Shop Theory & Calc.	2	0	2	E-3A	Shop Theory & Calc.	2	0	2
H-11	Sociology	2	0	2	E-14A	Mechanics (Statics)	3	0	3
		13	16	21			16	9	20.5

Junior Year

	First Term					*Second Term*			
E-13A	Heat & Power	3	2	4	E-13B	Heat & Power	3	2	4
E-14B	M'ch'nics (Dyn'mics)	3	0	3	E-20	Mechanisms	2	4	4
E-16A	Str. of Mats.	3	0	3	E-16B	Str. of Mats.	3	0	3
E-18A	Elect. Eng.	3	2	4	E-18B	Elect. Eng.	3	2	4
M-5A	Diff. Equations	2	0	2	M-5B	Diff. Equations	2	0	2
E-4	Machine Tool Lab.	0	6	3	E-17	Metallurgy	2	0	2
TE-323	Microscopy	0	2	1	E-21	Tool Inspection	1	3	2.5
		14	12	20			16	11	21.5

Senior Year

	First Term					*Second Term*			
E-22	Jig, Fixt. & Tool Design	2	12	8	E-24	Machine Design	3	12	9
E-25	Fluid Mechanics	3	0	3	E-26	Mechanical Eng. Lab.	0	3	1.5
E-23	Des. of Mach. Elements	3	6	6	H-4	**Industrial Psych.**	**2**	**0**	**2**
P-101	Electronics	2	0	2	P-102	Electronics	2	0	2
Eng-2	Report Writing	2	0	2	Eng-3	Business Writing	2	0	2
						Electives	2	0	2
		12	18	21			11	15	18.5

Total Cr. hours — 160.5

Bachelor of Science

Major — Textile Engineering, Manufacturing Option

This course is especially designed to equip the student with the technical and practical background necessary for a graduate who is to enter one of the various fields of textile manufacturing. That is, yarn and fabric development and production, converting, selling, testing, research, etc.

Many years of experience in the field of textile education have resulted in a systematically arranged course of study. In order that the student will thoroughly understand and intelligently apply the principles involved in modern manufacture of fabrics from both natural and man made fibers, he will, in the first two years, pursue these courses of study which are basic to all engineering, *i.e.*, mathematics, chemistry, physics, engineering drawing, English composition, etc. In the interim he is gradually introduced to the more elementary phases of fabric construction.

He is thoroughly instructed in both the theoretical and practical phases of picking, carding, drawing and weaving. This work begins with elementary stages in the first year and continues through four years to the most advanced stages. Designing and cloth analysis are introduced during the second year and the scope is gradually broadened through the third and fourth years. The blending of na-

tural and man-made fibers of cotton, wool, worsted, rayons, etc., is considered. During the fourth year the student studies the processing of rayons, nylon, vinyon and other continuous filaments.

The student must complete other courses of study necessary for one who would compete successfully in the textile field. Among these are thorough courses in knitting, textile dyeing, merchandising, economics, applied electricity, machine tool laboratory practice and modern industrial plant construction.

A review of the curriculum will reveal a rigid four year schedule. However, past experience and the results achieved by our graduates have warranted such a schedule and have shown that its successful completion is well within the grasp of those who will succeed.

Freshman Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
M-1	Algebra & Trig.	4	0	4
Ch-101A	General Chemistry	2	4	4
Eng.-1	English Comp. I	3	0	3
H-3	U. S. History	2	0	2
E-101	Engineering Drawing	0	4	2
E-1	Machine Tool Lab.	1	2	2
TE-320	Introductory Textiles	3	0	3
		15	10	20

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
M-1	Algebra & Analytic Geometry	4	0	4
Ch-107	Elementary Dyeing	2	4	4
Eng.-1	English Comp. II	3	0	3
E-102	Engineering Drawing	0	4	2
H-2	General Psychology	2	0	2
E-1	Machine Tool Lab.	0	2	1
TE-320	Introductory Textiles	2	0	2
E-20S	Elementary Mechanisms	2	0	2
		15	10	20

Sophomore Year

	First Term			
P-1	Physics	3	2	4
M-4A	Diff. Calculus	3	0	3
H-1	Economics	2	0	2
Ch-109	Textile Printing	1	3	2.5
TE-101	Yarn Manufacture	2	2	3
TE-203	Weaving	1	2	2
TE-201	Yarn Calculations	1	0	1
TE-309	Fabric Analysis I	1	1	1.5
TE-301	Weave Formation I	1	1	1.5
		15	11	20.5

	Second Term			
P-2	Physics	3	2	4
M-4B	Integral Calculus	3	0	3
H-1	Economics	2	0	2
Ch-120	Textile Printing	1	3	2.5
TE-102	Yarn Manufacture	2	2	3
TE-204	Weaving	1	2	2
TE-202	Warp Preparation	1	0	1
TE-302	Weave Formation I	1	1	1.5
TE-310	Fabric Analysis I	1	1	1.5
		15	11	20.5

Junior Year

	First Term			
H-6	Marketing	2	0	2
E-18A	Electricity	2	0	2
E-103	Engineering Drawing (Tex. Mechanisms)	0	2	1
TE-307	Color	1	0	1
TE-103	Yarn Manufacture	2	2	3
TE-204	Weaving	1	3	2.5
TE-303	Weave Formation II	1	1	1.5
TE-311	Fabric Analysis II	1	2	2
TE-353	Physical Testing	1	2	2
E-13A	Thermodynamics	3	0	3
		14	12	20

	Second Term			
E-18B	Electricity	2	0	2
H-8	Sociology	2	0	2
TE-104	Yarn Manufacture	2	3	3.5
TE-108	Cotton Classing	1	0	1
TE-205	Weaving	1	3	2.5
TE-304	Weave Formation II	1	1	1.5
TE-312	Fabric Analysis II	1	2	2
TE-353	Physical Testing	1	2	2
M-6	Statistics	3	0	3
		14	11	19.5

SENIOR YEAR

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
Eng-2	Report Writing	2	0	2
Ch-18S	Textile Finishing	1	3	2.5
TE-105-6	Yarn Manufacture	2	3	3.5
TE-206	Weaving	1	4	3
TE-305	Jacquard Designing	1	2	2
TE-313	Fabric Analysis III	0	2	1
TE-355	Microscopy	1	2	2
Ch-121	Manufacture of Synthetic Fibers	1	0	1
TE-208	Synthetic Processing	1	1	1.5
TE-501 to 505	Knitting	1	1	1.5
		11	18	20

No.	Name	Cl. Hours	Lab.	Cr.
	Second Term			
Eng-3	Business Writing	2	0	2
Ch-19S	Textile Finishing	1	3	2.5
TE-107	Applied Research	0	3	1.5
TE-207	Weaving	1	4	3
TE-306	Jacquard Designing II	1	2	2
E-104	Mill Engineering	1	2	2
TE-355	Microscopy	1	2	2
TE-314	Fabric Analysis III	1	2	2
TE-208	Synthetics Processing	1	1	1.5
Te-506 to 510	Knitting	1	2	2
		10	21	20.5

Total Cr. hours — 161

Bachelor of Science

Major — Textile Engineering, Engineering Option

In compliance with the scientific advances relative to the methods and procedures in textile manufacturing, this Engineering Option curriculum offers a broader basic engineering foundation than does the Manufacturing Option curriculum.

Included in this curriculum are pure engineering subjects not a part of the Manufacturing Option, viz., statics, advanced thermodynamics, strength of materials, mechanisms, dynamics and statistics. Other than a necessary adjustment of class hours, to allow for the addition of the foregoing engineering subjects, the Engineering Option is similar to the Manufacturing Option in technical textile courses.

Bachelor of Science
Major — Textile Engineering, Engineering Option

FRESHMAN YEAR

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
M-1	Algebra & Trig.	4	0	4
Ch-101A	General Chemistry	2	4	4
Eng-1	English Comp. I	3	0	3
H-3	U. S. History	2	0	2
E-101	Engineering Drawing	0	4	2
E-1	Machine Tool Lab.	1	2	2
TE-320	Introductory Textiles	3	0	3
		15	10	20

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
M-1	Algebra & Anal. Geometry	4	0	4
Ch-107	Elementary Dyeing	2	4	4
Eng-1	English Comp. II	3	0	3
E-102	Engineering Drawing	0	4	2
H-2	General Psychology	2	0	2
E-1	Machine Tool Lab.	0	2	1
TE-320	Introductory Textiles	2	0	2
E-20S	Elem. Mechanisms	2	0	2
		15	10	20

SOPHOMORE YEAR

	First Term			
P-1	Physics	3	2	4
M-4A	Diff. Calculus	3	0	3
H-1	Economics	2	0	2
Ch-109	Textile Printing	1	3	2.5
TE-101	Yarn Manufacture	2	2	3
TE-203	Weaving	1	2	2
TE-201	Yarn Calculations	1	0	1
TE-309	Fabric Analysis I	1	1	1.5
TE-301	Weave Formation	1	1	1.5
		15	11	20.5

	Second Term			
P-2	Physics	3	2	4
M-4B	Integral Calculus	3	0	3
H-1	Economics	2	0	2
TE-202	Warp Preparation	1	0	1
TE-102	Yarn Manufacture	2	0	2
TE-204	Weaving	1	1	1.5
TE-302	Weave Formation I	1	1	1.5
TE-310	Fabric Analysis I	1	1	1.5
E-14A	Statics	3	0	3
H-8	Sociology	2	0	2
		19	5	21.5

Junior Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Semester			
E-18A	Electricity	2	0	2
TE-307	Color	1	0	1
E-13A	Thermodynamics	3	0	3
E-16A	Strength of Mats.	3	0	3
TE-353	Physical Testing	1	2	2
TE-103	Yarn Manufacture	2	2	3
TE-204	Weaving	1	2	2
TE-303	Weave Formation II	1	1	1.5
TE-311	Fabric Analysis II	1	1	1.5
		15	8	19

No.	Name	Cl. Hours	Lab.	Cr.
	Second Semester			
E-18B	Electricity	2	0	2
E-13B	Thermodynamics (Advanced)	3	0	3
E-16B	Strength of Mats.	3	0	3
E-20	Mechanisms	2	4	4
TE-353	Physical Testing	1	2	2
TE-104	Yarn Manufacture	2	0	2
TE-205	Weaving	1	1	1.5
TE-304	Weave Formation II	1	1	1.5
TE-312	Fabric Analysis II	1	1	1.5
TE-108	Cotton Classing	1	0	1
		17	9	21.5

Senior Year

	First Semester			
Eng-2	Report Writing	2	0	2
Ch-18S	Textile Finishing	1	3	2.5
E-14B	Dynamics	3	0	3
TE-355	Microscopy	1	2	2
TE-105-6	Yarn Manufacture	2	3	3.5
TE-206	Weaving	1	4	3
TE-305	Jacquard Designing	1	2	2
Ch-121	Manufacture of Synthetic Fibers	1	0	1
TE-208	Synthetic Processing	1	1	1.5
TE-501S to 505S	Knitting	1	1	1.5
		14	16	22

	Second Semester			
Eng-3	Business Writing	2	0	2
Ch-19S	Textile Finishing	1	3	2.5
TE-355	Microscopy	1	2	2
M-6	Statistics	3	0	3
TE-107	Applied Research	0	3	1.5
TE-207	Weaving	1	4	3
TE-306	Jacquard Designing	1	2	2
E-104	Mill Engineering	1	2	2
TE-208	Synthetic Processing	1	1	1.5
TE-506S to 510S	Knitting	0	2	1
		11	19	20.5

Total Cr. hours — 165

Bachelor of Science
(tentative)
Major — Textile Design and Fashion

In keeping with the current scientific advancement in American textiles, and to fulfill the requirement relative to competent textile designers, the New Bedford Textile Institute has added a new Department of studies in Textile Design and Fashion.

Spectacular advancements in textile technology and engineering during the past decade point up a paramount need for a co-ordination of the special techniques of fabric and garment designers.

The styling, designing, and development of fabrics and textures now require an extensive technical knowledge on the part of those concerned with the artistic and functional elements of textile materials.

This course of study has foundation design and drawing as the principal subjects in the Freshman year. Other courses in the first year include lettering, fundamental textile subjects, elementary chemistry and dyeing, U. S. history, English and sociology.

Courses in applied textile design, art history, drawing and painting, plus theory and practical studies of textile manufacturing, dyeing and finishing comprise the major part of the second, third and fourth years.

Courses in dress design, pattern drafting and fashion illustration are given in the Junior and Senior years. Academic subjects (required for a degree) are included throughout the curriculum.

Other than in the Freshman year, projects are required whereby the student creates and executes his own original designs, in both fabric and apparel.

The New Bedford Textile Institute shall request the State Board of Collegiate Authority to grant the right to offer a college degree to the students completing this four year course in Textile Design and Fashion.

Bachelor of Science
(tentative)
Major — Textile Design and Fashion

Freshman Year

No.	Name	Hours	Cr.
	First Term		
TD-105	Nature Drawing	2	1.5
TD-106	Foundation Drawing	6	4
TD-101	Design	10	6
TD-109	Lettering	1	1.5
H-8	Sociology	2	2
TE-320	Intro. Survey of Text.	1	1
Eng-1	Eng. Comp. I	3	3
H-3	U. S. History	2	2
Ch-122	Chemistry	1	1
		28	22

No.	Name	Hours	Cr.
	Second Term		
TD-105	Nature Drawing	2	1.5
TD-106	Foundation Drawing	6	4
TD-101	Design	10	6
TE-307	Theory of Color	1	1
Ch-7S	Dyeing	3	2
Eng-1	Eng. Comp. II	3	3
H-2	General Psychology	2	2
E-27	Theory of Projection	2	2
TE-316	Fabric Classification	2	1.5
		31	23

Sophomore Year

No.	Name	Hours	Cr.
	First Term		
TD-107	Life Drawing	6	4
TD-110	Nature Drawing	2	1.5
TD-111	History of Art	2	2
TD-102	Textile Design	5	3
Ch-120	Screen Printing	5	3
TE-301, 9	Weave Form. & Anal.	4	3
TE-109	Yarn Manufacturing	1	1
TD-113	Handloom Weaving	4	2
		29	19.5

No.	Name	Hours	Cr.
	Second Term		
TD-107	Life Drawing	6	4
TD-110	Nature Painting	3	2
TD-111	History of Art	2	2
TD-102	Textile Design	5	3
Ch-120	Screen Printing	5	3
TE-302,10	Weave Form. & Anal.	4	3
	Weaving	2	1.5
TD-113	Handloom Weaving	4	2
		31	20.5

Junior Year

No.	Name	Hours	Cr.
	First Term		
TD-108	Life Drawing	6	4
TD-112	History of Art	2	2
TD-103	Textile Design	6	3
TE-303,11	Weave Form. & Anal.	5	3.5
TE-209	Weaving	2	1
TD-114	Handloom Weaving	4	2
Ch-120	Screen Printing	3	1.5
H-9	Applied Psychology	2	2
H-1	Economics	2	2
		32	21

No.	Name	Hours	Cr.
	Second Term		
TD-112	History of Art	2	2
TD-103	Textile Design	6	3
TE-304,12	Weave Form. & Anal.	5	3.5
TE-209	Weaving	2	1
Ch-18S	Textile Finishing	3	1.5
TD-115	Fashion Illustration	3	2
TD-117	Fashion Fundamentals	4	2
H-1	Economics	2	2
	Elective		2
		27+	19

Senior Year

No.	Name	Hours	Cr.
	First Term		
TD-104	Textile Design	10	5
TE-305	Jacquard Design	3	2
Eng-2	Report Writing	2	2
TE-512	Knitting	2	1
TE-351	Textile Testing	2	1
TD-118	Pattern Drafting	4	2
TD-116	Fashion Illustration	4	2
TE-315	Styling	2	1
	Electives		3
		29+	19

No.	Name	Hours	Cr.
	Second Term		
TD-104	Textile Design	10	5
TE-306	Jacquard Design	3	2
Eng-3	Business Writing	2	2
TD-116	Fashion Illustration	4	2
TD-118	Pattern Drafting	4	2
TD-119	Degree Project	6	3
	Electives		3
		29+	19

Total Cr. hours — 163

Chemistry, Dyeing and Finishing Course
Diploma — 3 years

First Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
M-7	Elementary Math.	4	0	4
M-8	Slide Rule	1	0	1
P-1S	Elementary Physics	2	0	2
E-8	Engineering Drawing	0	4	2
Ch-101	General Chemistry	2	4	4
H-1	Economics	2	0	2
TE-319	Intro. Survey of Text.	1	0	1
		12	8	16
	Second Term			
M-7	Elementary Math.	4	0	4
P-1S	Elementary Physics	2	0	2
E-8	Engineering Drawing	0	4	2
Ch-1	Inorganic Chemistry	5	6	8
H-1	Economics	2	0	2
H-2	General Psychology	2	0	2
		15	10	20

Second Year

	First Term			
Ch-13	Organic Chemistry	2	4	4
Ch-3	Elem. Quant. Anal.	2	4	4
Ch-7	Elementary Dyeing I	2	4	4
TE-316m	Fabric Classification	1	1	1.5
		7	13	13.5
	Second Term			
Ch-14	Organic Chemistry	2	4	4
Ch-4	Elem. Quant. Anal.	2	4	4
Ch-8	Elem. Dyeing II	2	4	4
TE-316	Fabric Classification	1	1	1.5
Ch-2	Qualitative Analysis	2	4	4
		9	17	17.5

Third Year

	First Term			
Ch-9	Advanced Dyeing I	2	6	5
Ch-15	Organic Chemistry (Mfg. of Dyes)	2	6	5
Ch-18	Textile Finishing	1	6	4
Ch-16	Industrial Textile Chem. Analysis	1	6	4
Eng-2	Report Writing	2	0	2
		8	24	20
	Second Term			
Ch-10	Advanced Dyeing II	1	6	4
Ch-20	Textile Printing	2	4	4
TE-307	Color	1	1	1.5
Ch-19	Textile Finishing	1	6	4
Ch-17	Industrial Textile Chem. Analysis	1	6	4
Eng-3	Business Writing	2	0	2
		8	23	19.5

General Textile Manufacturing Course
Diploma — 3 years

First Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
Ch-101A	Chemistry	2	4	4
E-101	Engineering Drawing	0	4	2
Eng-1	English Comp. I	3	0	3
M-8	Slide Rule	1	0	1
E-14S	Mechanics	2	0	2
TE-101	Yarn Mfg.	2	2	3
TE-203	Weaving	1	2	2
TE-201	Yarn Calculations	1	0	1
TE-309	Fabric Analysis I	1	1	1.5
TE-301	Weave Formation I	1	1	1.5
		14	14	21
	Second Term			
Ch-107	Elementary Dyeing	2	4	4
E-102	Engineering Drawing	0	4	2
Eng-1	English Comp. II	3	0	3
E-20S	Elem. Mechanisms	2	0	2
TE-102	Yarn Manufacture	2	2	3
TE-204	Weaving	1	2	2
TE-202	Warp Preparation	1	0	1
TE-302	Weave Formation I	1	1	1.5
TE-310	Fabric Analysis I	1	1	1.5
		13	14	20

Second Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
E-1	Machine Tool Lab.	0	2	1
E-13A	Elem. Heat & Power	2	0	2
Ch-109	Textile Printing	1	3	2.5
TE-307	Color	1	0	1
TE-103	Yarn Manufacture	2	2	3
TE-204	Weaving	1	3	2.5
TE-303	Weave Formation II	1	1	1.5
TE-311	Fabric Analysis II	1	1	1.5
TE-353	Physical Testing	1	2	2
Ch-121	Mfg. of Synthetic Fib.	1	0	1
TE-501 to TE-505	Knitting	1	2	2
		12	16	20

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
E-1	Machine Tool Lab.	0	2	1
E-103	Engineering Drawing	0	3	1.5
Ch-120	Screen Printing	1	3	2.5
TE-104	Yarn Mfg.	2	3	3.5
TE-108	Cotton Classing	1	0	1
TE-205	Weaving	1	3	2.5
TE-304	Weave Formation II	1	1	1.5
TE-312	Fabric Analysis II	1	1	1.5
TE-353	Physical Testing	1	2	2
TE-506 to TE-510	Knitting	1	2	2
		9	20	19

Third Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
E-18	Electricity	2	0	2
H-6	Marketing	2	0	2
H-1	Economics	2	0	2
Ch-18S	Textile Finishing	1	3	2.5
TE-105,6	Yarn Mfg.	2	3	3.5
TE-206	Weaving	1	4	3
TE-305	Jacquard Designing	1	2	2
TE-313	Fabric Analysis III	0	2	1
TE-355	Microscopy	1	2	2
TE-208	Synthetics Processing	1	1	1.5
		13	17	21.5

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
H-1	Economics	2	0	2
Ch-19	Textile Finishing	1	3	2.5
TE-107	Applied Research	0	3	1.5
TE-207	Weaving	1	4	3
TE-306	Jacquard Designing II	1	2	2
E-104	Mill Engineering	1	2	2
TE-355	Microscopy	1	2	2
TE-314	Fabric Analysis III	1	2	2
TE-208	Synthetics Processing	1	1	1.5
		9	19	18.5

Textile Designing Course
Diploma — 3 years

First Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Semester			
TE-101	C.Y.P.	1	2	2
TE-203	Weaving	1	2	2
TE-309	Analysis	1	2	2
TE-301	Designing	3	0	3
TE-317	Hand Loom	0	1	0.5
E-14S	Mechanics	1	0	1
M-5	Slide Rule	1	0	1
E-101	Eng. Drawing	0	4	2
TE-201	Yarn Calcs.	2	0	2
Ch-101A	Chemistry	2	4	4
TE-403	Microscopy	1	2	2
TE-402	Rayon Test.	0	2	1
		13	19	22.5

No.	Name	Hours Cl.	Lab.	Cr.
	Second Semester			
TE-102	C.Y.P.	2	2	3
TE-204	Weaving	1	2	2
TE-202	Warp. Preparation	2	0	2
TE-302	Designing	3	0	3
TE-310	Analysis	1	2	2
TE-317	Hand Loom	0	1	0.5
E-102	Eng. Drawing	0	4	2
Ch-107	Elem. Dyeing	2	4	4
TE-403	Microscopy	1	2	2
TE-402	Rayon Test.	0	2	1
		12	19	21.5

Second Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Semester			
TE-103	C.Y.P.	1	2	2
TE-204	Weaving	1	5	3.5
TE-303	Designing	3	0	3
TE-311	Analysis	1	2	2
TE-312	Analysis	1	2	2
TE-307	Color	1	1	1.5
TE-402	Rayon Test.	0	3	1.5
E-103	Eng. Drawing	0	3	1.5
E-1	Machine Shop	0	2	1
E-13A	Heat & Power	2	0	2
Ch-109	Adv. Dyeing	1	4	3
		11	24	23

No.	Name	Hours Cl.	Lab.	Cr.
	Second Semester			
TE-104	Adv. Calcs.	1	2	2
TE-107	Cotton Class.	1	1	1.5
TE-205	Weaving	1	6	4
TE-304	Designing	3	0	3
TE-308	Color	1	1	1.5
TE-313	Analysis	1	4	3
E-1	Machine Shop	0	2	1
E-103	Eng. Drawing	0	3	1.5
E-13B	Heat & Power	1	0	1
TE-401	Fabric Test.	0	2	1
Ch-109	Adv. Dyeing	1	4	3
		10	25	22.5

Third Year

	First Semester			
TE-206	Weaving	1	4	3
TE-305	Jacquard Des.	1	5	3.5
TE-314	Analysis	2	5	4.5
TE-510	Knitting	1	1	1.5
TE-308	Color	1	1	1.5
E-18	Electricity	2	0	2
H-9	Merchandising	2	0	2
H-1	Economics	2	0	2
Ch-18	Text. Finish.	1	6	4
		13	22	24

	Second Semester			
TE-206	Weaving	1	5	3.5
TE-306	Jacquard Des.	1	5	3.5
TE-314	Analysis	1	4	3
TE-315	Styling	1	3	2.5
E-104	Mill Eng.	1	2	2
H-1	Economics	2	0	2
TE-401	Fabric Test.	0	2	1
Ch-19	Text. Finish.	1	6	4
		8	27	21.5

Drafting and Machine Shop Practice

Certificate — 2 years

First Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Semester			
M-1S	Mathematics	4	0	4
P-1S	Physics	2	0	2
M-8	Slide Rule	1	0	1
E-8	Eng. Drawing	1	10	6
E-1, 2	Machine Shop	1	10	6
		9	20	19

No.	Name	Hours Cl.	Lab.	Cr.
	Second Semester			
M-2S	Mathematics	4	0	4
P-2S	Physics	2	0	2
E-9	Eng. Drawing	1	10	6
E-3, 4	Machine Shop	1	10	6
		8	20	18

Second Year

	First Semester			
E-20AS	Elem. Mechanisms	2	0	2
E-16AS	Elementary Str. of Mats.	2	0	2
E-18	Electricity	2	2m	3
E-10	Engineering Drawing	1	8	5
E-5, 6	Machine Tool Lab.	1	10	6
TE-355S	Microscopy	0	2	1
H-1	Economics	2	0	2
		10	22	21

	Second Semester			
E-21	Tool Inspection	1	3	2.5
E-18	Electricity	2	2	3
E-10	Engineering Drawing	1	8	5
E-7	Machine Tool Lab.	1	10	6
H-1	Economics	2	0	2
		7	23	18.5

Textile Technology Course

Certificate — 2 years

First Year

No.	Name	Hours Cl.	Lab.	Cr.
	First Term			
Ch-101A	Chemistry	2	4	4
TE-307	Color	1	0	1
TE-316	Fabric Classification	1	1	1.5
TE-351	Physical Testing	1	3	2.5
TE-355	Microscopy	1	2	2
TE-301	Weave Formation I	1	2	2
TE-309	Fabric Analysis I	1	2	2
TE-109	Yarn Manufacturing	1	1	1.5
TE-201	Yarn Calculations	2	0	2
TE-203	Weaving	1	1	1.5
		12	16	20

No.	Name	Hours Cl.	Lab.	Cr.
	Second Term			
Ch-107	Elementary Dyeing	2	4	4
TE-316	Fabric Classification	1	1	1.5
TE-351	Physical Testing	1	3	2.5
TE-355	Microscopy	1	2	2
TE-302	Weave Formation I	1	2	2
TE-310	Fabric Analysis I	1	2	2
TE-203	Weaving	1	1	1.5
TE-202	Warp Preparation	1	0	1
TE-501 to TE-505	Knitting	1	2	2
		10	17	18.5

Second Year

	First Term			
Ch-113	Quantitative Anal.	2	4	4
TE-303	Weave Formation II	1	1	1.5
TE-311	Fabric Analysis II	1	2	2
TE-305	Jacquard Designing	1	2	2
TE-204	Weaving	1	1	1.5
TE-506 to TE-510	Knitting	0	2	1
TE-352	Physical Testing	2	4	4
TE-356	Microscopy	0	3	1.5
H-6	Marketing	2	0	2
TE-315	Styling	0	2	1
		10	21	20.5

	Second Term			
TE-304	Weave Formation II	1	1	1.5
TE-312	Fabric Analysis II	1	2	2
TE-306	Jacquard Designing II	1	2	2
TE-205	Weaving	1	2	2
Ch-220	Screen Printing	1	4	3
TE-356	Microscopy	0	3	1.5
TE-352	Physical Testing	2	4	4
TE-108	Cotton Classing	1	0	1
TE-511	Garment Construction	1	2	2
		9	20	19

DEPARTMENT OF CHEMISTRY

Ch-1 Inorganic Chemistry

This course is required of those students enrolled for the Bachelor of Science in Chemistry Degree. The course is divided into two sections. Section I is taken during the first three months of the first semester and during the second semester and comprises a thorough study of basic chemical facts (study of matter, atomic structure and its applications to chemical reactions, the states of matter, solutions and equilibrium; certain elements and their compounds are studied in order to show more clearly the relation between theory and practice). Section II is taken during the last month of the first semester and comprises a study of the manufacture of chemical materials of importance to Textile Chemists (acetic acid, sulfuric acid, soda-ash, caustic soda, the artificial fibers, etc.). The laboratory work associated with CH-1 is designed to accompany the lectures very closely and thus enable the student to better learn the facts and theories they are studying.

Prerequisite: High school chemistry
Mr. Fiocchi

Ch-2 Qualitative Analysis

This course enables the student to tell what inorganic, and a few organic, substances are present in a compound. The latest semi-micro technique of analysis is used. In the laboratory the student applies what he has studied in the analysis of both "known" and "unknown" materials. Problem work dealing with equilibrium and the other important phases of qualitative analysis is stressed and the student is taught how to think for himself.

Prerequisite: Ch-1
Mr. Fiocchi

Ch-3 Quantitative Analysis

The lectures in this course comprise a thorough and complete discussion of the theories of solutions, a quantitative approach to oxidation-reduction reactions (redox reactions) and a study of some precipitation methods. The laboratory work is an application of the lectures. It consists of the calibration of the volumetric ware used and the analysis of materials by neutralization, oxidation- reduction and precipitation methods. Quality rather quantity is stressed.

Prerequisites CH-1 and CH-2
Professor Fenaux

Ch-4 Quantitative Analysis II

This course is a continuation of Ch-3 and consists of a study of the gravimetric methods of analysis.

Prerequisite: Ch-3
(Instructor) As for Ch-3

Ch-5 Advanced Quantitative Analysis
Ch-6 Advanced Quantitative Analysis II

These are primarily laboratory courses in which the student analyzes many materials of a more advanced nature than encountered in Ch-3 and 4. He employs many methods used in commercial practice and alalyzes steel, copper alloys, ores, silicate rock, minerals, etc. The student uses electroanalysis, potentiometry, photometry colorimetry and gas analysis. He also studies more at length and more deeply certain special topics of Quantitative Analysis (indicators, redox equilibrium, etc.). Frequent reference is made to recent advances and discoveries in current chemical literature.

Prerequisites: Ch-3 and Ch-4
Professor Fenaux

Ch-7 Elementary Dyeing

This course consists of (1) a study of the physical and chemical constitution of the textile fibers, both natural and artificial; (2) a study of the action of physical and chemical agents upon the fibers; and (3) a study of the methods of application and the effects of the various classes of dyes upon fibers.

Prerequisite: Ch-1
Professor Dupre

Ch-8 Elementary Dyeing II

This course, which is a continuation of Ch-7, teaches the student how to process the various fibers; how to test the dyed fibers for the various characteristics and how to enhance certain of these characteristics by special treatment of the fibers, before and/or after dyeing.

Prerequisite: Ch-7
Professor Dupre

Ch-9 Advanced Dyeing I

This course is taken concurrently with Ch-20 in order that the special attention necessary in preparing ground shade for discharge printing and the details of overdyeing resist printed fabrics may be better understood by the student. The theory of the selection of dyes for those purposes and the need for the addition of special chemical agents to the dyebaths is studied in detail.

Professor Dupre

Ch-10 Advanced Dyeing II

The theory and practice of color matching are principally emphasized in this course. The student is taught proper method of obtaining a given shade by using a combination of several dyes. The testing of various classes of dyestuffs for their coloring powers and money value is included. The characteristics of the various dyestuff combinations is considered.

The more important AATCC tests procedures are also carried out.

Prerequisites: Ch-7 and Ch-8
Professor Broadmeadow

Ch-11 Advanced Dyeing IV (Dyeing and Finishing of Knit Goods)

Preparation for and dyeing of hosiery and other knitted fabrics. This course includes the theory and reason for preboarding nylon hose and the presetting of nylon and other synthetic fiber fabrics. The finishing and drying of hosiery and other knitted fabrics are studied.

Text: Lectures and assigned reading of selected articles from trade journals.
Professor Dupre

Ch-12 Chemistry of Textile Fibers

A course emphasizing: the relationship between the chemical structure and physical properties of fibers; the nature of the chemical reactions which produce degradation of fibers; the production of synthetic fibers. The short laboratory period is devoted to tests that serve to identify the types of fibers and their degradation products.

Professor Dupre

Ch-13 Organic Chemistry

This course consists of a study of those compounds of carbon comprising what is known as the "aliphatic" family. Particular stress is placed upon structual formulas the while a classification of properties and group reactions is made. The labora-

tory course comprises a study of more common methods of synthesis, the preparations exemplifying the principles studied in the lectures.

Prerequisites: Ch-1 and Ch-2
Professor Broadmeadow

Ch-14 Organic Chemistry II

This course is a continuation of Ch-12 in which compounds of carbon constituting the "aromatic" family and also certain heterocyclic compounds are studied.

Prerequisites: Ch-1, Ch-2 and Ch-13
Professor Broadmeadow

Ch-15 Organic Chemistry III
Manufacture of Dyes and Intermediates

This course is a specialized continuance of Ch-13 and Ch-14. It deals with the chemical nature of dyes, their preparation as well as of their intermediates. In the laboratory, the student prepares certain intermediates and dyes. He then tests them by comparing material dyed with his dyes to fibers dyed with commercially prepared dyes of the same class.

Prerequisites: Ch-13 and Ch-14
Professor Broadmeadow

Ch-16 Industrial Textile Chemical Analysis I

The student learns, during this course, how to determine the properties, and analyze, many of the chemical materials used in the textile industry. He will analyze soap, bleaching agents, caustic soda, soda-ash, etc. He is expected to apply the knowledge and experience acquired during the previous courses in Chemistry.

Prerequisites: Ch-3, 4, 5 and 6
Professor Tripp

Ch-17 Industrial Textile Chemical Analysis II

This course, a continuation of Ch-16, teaches the student how to analyze coal, oil, water, certain types of organic materials (using the Kjeldahl Method) and finishing compounds.

Prerequisites: Ch-3, 4, 5 and 6
Professor Tripp

Ch-18 Textile Finishing I

This course deals with the study of the finishing of textile fabrics. Lectures explain the theory and functions of the machinery involved in the finishing of the common textile fabrics. Practice in the singeing, scouring, bleaching, drying, calendering and mercerization of cotton cloth is provided in the finishing laboratory. The finishing of rayon, nylon and mixed fabrics is also studied.

Prerequisites: Ch-7, 8, 9, 10, 13, 14
Professors Broadmeadow, Dupre, Tripp

Ch-19 Textile Finishing II

This course is a continuation of Ch-18. The processing of wool, aralac and mixed fabrics is studied. The latest methods and machinery used in the industry are discussed and constant consultation of the literature on the subject is required. The student is given practice in the application of dyestuffs by the padder and jigger. The methods of yarn dyeing and the machinery involved, the organization and management of finishing plants are studied. The course is supplemented, and its value enhanced, by field trips to bleacheries, dyehouses and printing plants.

Prerequisites: Ch-7, 8, 9, 10, 13, 14
Professors Broadmeadow, Dupre, Tripp

Ch-20 Textile Printing I

In this course the student is introduced to the methods of textile printing (roller, screen, hand block, etc.) and the basic styles of printing (direct, discharge and resist). The preparation of print pastes for direct style printing of direct, basic, mordant insoluble azo, vat, leuco vat dyes, resin bonded pigments and oxidation colors is considered in detail, especially the complex chemical considerations of many of these print color preparations. All prepared color pastes are roller printed and the prints finished off by the students.

Text: Printing Outline (only) by Grimshaw and Dupre

Professor Dupre

Ch-21 Textile Printing II

This course is a continuation of Ch-9 and 9A in which the preparation of print colors for discharge and resist styles of printing are studied. The means by which the various effects are obtained are discussed in detail. The various preparations are screen printed and finished off by the students. This course is carried out in conjunction with Ch-9A.

Prerequisites: Ch-7, 8, 9, 10, 13, 14

Professor Dupre

Ch-22 Elementary Bacteriology

An introductory study of bacteria; their methods of cultivation and identification.

Professor Tripp

Ch-23 Textile Microbiology

This course includes the study of various micro-organisms and their importance to man and his textile world. Sterilization, disinfection, fumigation and staining, and methods of studying the action of molds and bacteria on textile fabrics are considered. Laboratory work includes preparation and sterilization of culture media, staining and microscopic observation of bacteria, mildew-proofing tests on textile fabrics.

Prerequisite: Ch-22

Professor Tripp

Ch-24 Colloid Chemistry of the Colloid State

An introduction to the colloidal state of matter, covering a consideration of the characteristics and behavior of colloidal substance; methods of preparing colloidal substances; a study of natural colloidal substances and a special study of the application of colloidal behavior to the chemistry of textiles, dyeing and finishing.

In the laboratory the student observes the fundamental characteristics and behavior of materials in the colloidal state; learns how to prepare colloidal substances and applies this knowledge to selected problems dealing with textile chemistry, dyeing and finishing.

Prerequisites: Ch-1, 2, 7, 8, 9, 10, 11, 12, 13, 14: M-4A & M-4B

Professor Fenaux

Ch-101A General Chemistry

This is an introductory course in Chemistry required of all students attending the Institute, with the exception of those enrolled for the degree in chemistry, during thir freshman year. It comprises a general survey of chemistry, its basic laws and theories, a general study of the commoner elements both metallic and non-metallic and a study of the use and application of chemistry to daily life. In the laboratory work which accompanies this course, the student performs experiments selected with a view to enabling him to learn to draw correct conclu-

sions from definitive happenings. It also enables him to acquire a certain manipulative technique in using the basic chemical tools.

Mr. Fiocchi

Ch-101B General Chemistry

This is an introductory course especially designed for students enrolled for the degree in machine design during their freshman year. In addition to covering the topics dealt with under Ch-101A, material of great importance to students of the metals profession are studied. These topics include: Industrial electro-chemical processes; commercial production and utilization of the most valuable acids, bases and salts of industry; the chemistry of cutting oils and protective coatings for metals.

Mr. Fiocchi

Ch-107 Elementary Dyeing

This course is adapted to the needs of the student taking the Textile Engineering Course. The content of this course is essentially that of Ch-7 only in a much shortened form. Much of the elaborate knowledge and laboratory work is omitted. The student obtains sufficient knowledge to enable him to become familiar with the terms and practices of the Dyeing Industry.

Prerequisite: Ch-101A

Professors Dupre and Broadmeadow

Ch-109 Textile Printing

This course is adapted to the needs of the students taking the Textile Engineering Course. The contents of this course are essentially that of Ch-20 only in a much shortened form.

Prerequisite: Ch-107

Professor Dupre

Ch-113 Quantitative Analysis

This is a semester course designed primarily for students in the Textile Technology Course. It is so designed that the student acquires a working knowledge of the fundamentals of volumetric and gravimetric analysis: concentration of solutions, normality and how determined, use of the burette and other volumetric apparatus, simple neutralization titrations, pH — its meaning and properties; the use of the analytical balance, the make-up and use of the Gooch filter, chemical factors and their applications, simple gravimetric processes.

Upon the successful completion of this course, the student is well equipped to perform simple routine analytical work and understand what she is doing.

Prerequisite: Ch-101A

Professor Fenaux

Ch-220 Screen Printing

This is a semester course given in collaboration with the Designing Department to the students in the Textile Technology Course. The students learn how to make their own designs, their own screens, how to print their designs and finish the prints. They are given some training in the making of the pastes and dyes and the simplified reactions involved in the printing.

Prerequisite: Ch-101A and Ch-107

Professor Giblin, Professor Tripp

Ch-121 Manufacture of Synthetic Fibers

This is a lecture course for the Seniors in the Textile Engineering Course. The student learns how the various synthetic fibers, both filament and yarn forms, are made, starting with their raw materials up to their emergence as yarns.

Professor Dupre

Ch-122 Chemistry Applied to Textile and Fashion Design

This is a lecture course given to the first year students of the Textile Design and Fashion curriculum. It consists of the basic essential elements of chemistry; a study of the relationship existing between the structure, both physical and chemical, of the textile fibers and their actions toward dyes and other substances used in the manufacture and finishing of fabrics; and a study of the other important phases of chemistry that are useful to textile and fashion designers.

Professor Fenaux

DEPARTMENT OF ENGINEERING
DIVISION OF MACHINE DESIGN

E-1 through E-7 Machine Tool Manufacturing

A continuous course systematically arranged according to the tool course involved. Consists of a thorough study of the most modern machinery used in the present day machine shop practice. The student is trained in the use of measuring instruments, turning, facing, boring, etc. Continued instruction is given on all machinery, including the miller, shaper, a planer and grinders. This course is supplemented by lectures in shop theory and classes in shop calculations.

Professor Bayreuther

E-8 Engineering Drawing

The use and care of the drawing instruments, lettering, theory of shape description, orthographic projection, sketching, sectional views, auxiliary views, methods of dimmensioning, screw fasteners, isometric, detail and assembly of machine parts.

Mr. Barylski

E-9 Engineering Drawing

Continuation of E-8

Mr. Barylski

E-10 Engineering Drawing

Complete detail and assembly drawings of small machines, with complete practical limit dimensions and tolerances, notes and all information necessary for a working drawing.

Mr. Barylski

E-11 Descriptive Geometry

A more direct method of the applications of the principles of descriptive geometry from the point of view of the engineer. A wide variety of topics such as straight lines, curves and curved lines, planes, intersections and developments of surfaces, single and warped curved surfaces, double curved surfaces.

Prerequisite: E-18

Professor Tinkham

E-12 Electrical Drafting

Consists of both lecture and drafting room practice. Considers the proper methods of laying out wiring for both light and power. All proper sizes for wire, protective devices, etc., are determined by actual calculation according to the loads involved. Constant reference is made to the recommendations of the National Board of Fire Underwriters.

Prerequisite: E-18

Mr. Gonsalves

E-101 Engineering Drawing

A course especially arranged for the students of textile engineering. Consists of detail and assembly drawing with the proper application of dimensions, tolerances, etc. A study of gears and cams as applied to textile machinery is also taken.
Mr. Barylski

E-102 Engineering Drawing

A continuation of E-101.

E-103 Engineering Drawing

A special study of textile machinery mechanisms.

Prerequisite: E-101 and E-102
Mr. Barylski

E-13A Thermodynamics

Principles of thermodynamics: the first law, energy and its conservation; the second law, properties of gases, liquids and vapors. A study of the operating principles of the essential heat-power equipment found in steam power plants.

Prerequisites: M-1, M-4 and P-1.
Mr. Gonsalves

E-13B Thermodynamics (Advanced)

The application of thermodynamics to power cycles; the performance of prime movers; the flow of fluids through heat-power machines; refrigeration; elements of heat transfer.

Prerequisite: E-13A
Mr. Gonsalves

E-14A Applied Engineering Mechanics (Statics)

A study of those topics ordinarily considered under the subject of statics. The various force systems, friction, centroids and center of gravity, moments of inertia of areas, etc.

Prerequisites: M-1, M-4, P-1
Professor Tinkham

E-14B Applied Engineering Mechanics (Dynamics)

A study of those topics ordinarily considered under the subject of dynamics, kinematics of rectilinear motion, kinetics of rectilinear motion, curvilinear motion, kinematics and kinetics of rotation, plane motion, work, power and energy, impulse and momentum.
Professor Tinkham

E-15 Manufacturing Analysis

A study of the organization and coordination of both manufacturing processes and equipment, and operation planning.
Prerequisites: E-1, E-7, E-8, E-10
Professor Bayreuther

E-16A, E-16B Strength of Materials

Elementary stresses and strains; stresses due to change of temperature; combined stresses; riveted joints; strength and deflection of beams; longitudinal shear bending; columns; reinforced concrete beams; strain energy; impact loading.

Prerequisites: M-4, P-1
Professor Tinkham

E-17 Metallurgy

A lecture course on the various processes of working metals and separating them from their ores.

Prerequisite: Ch-1, E-1, E-7
Mr. Fenaux

E-18A, E-18B Electrical Engineering

A course in the fundamental principles of electrical engineering. It includes a study of d-c and single phase a-c circuits and measurements; magnetic circuit theory; operation and control of different current generators and motors. Three phase circuits and measurements; transformer connections; a study of the operation and control of the squirrel-cage and wound-rotor motors and the synchronous motor. Classroom and laboratry.

Prerequisites: M-4, P-2
Mr. Gonsalves

E-19 Pattern Making

A study of pattern making as associated with foundry and metal trades. In order that the student will design more intelligently he is instructed in the various phases of this trade, *i.e.,* the use of the shrinkage rule, allowing for draft, etc.
Prerequisites: E-1, E-7 and E-8, E-10

E-20A Mechanisms

A study of mechanisms and machines, transmission of motion by the various means, friction wheels, flexible connectors, cams, centres, gears, etc. A study is also made of velocity diagrams and acclerations in mechanisms.
Professor Tinkham

E-20B Mechanisms

A continuation of E-20A.

Prerequisites: M-1, M-4, E-14A and B
Professor Tinkham

E-21 Tool Inspection

A careful study of the use and application of precision instruments as applied to tool inspection. This course includes both lectures on the proper use of these instruments and actual laboratory practice in tool inspection. Laboratory practice includes the use of the various precision gages, size block, shadow graphs, hardness testers, sine bars, etc.

Prerequisites: E-1, E-7, E-8, 9, 10, M-1, M-2
Professor Bayreuther

E-22 Jig, Fixture and Tool Design

This course consists of both lectures on the various types of jigs, fixtures and tools, and actual practice in the drafting room. The student is instructed in the generally accepted methods of construction, the proper allowances, fits, clearances, etc. Particular attention is paid to the simplicity of construction, always keeping in mind the use to which tool is to be put.

Prerequisites: E-1, E-7, M-1, M-2
Professor Tinkham

E-23 Design of Machine Elements

Theory and problems involving both analysis and design of machine parts used in the construction of modern machines. Some of the machine parts studied are: shafts, keys, couplings, clutches, brakes, screes, bearings and lubrication,

gears, belts, and pulleys, cam springs and flywheels. Consideration is given to such factors as the selection of the proper material, strength, stress concentrations, heat treatment, inertia forces and fatigue failure.

Prerequisites: E-15A & B, E-16A & B

Professor Tinkham

E-24 Machine Design

A continuation of E-23, in which the student is given the opportunity to analyze and design complete machines such as reciprocating engines, punch presses and machine tools involving both mechanical and hydraulic controls.

E-25 Fluid Mechanics

A study of the properties of iseal fluids; fluid statics, flow of compressible and incompressible fluids in pipes and open channels; measurement of pressure, and quantity rate.

Prerequisites: P-2, E-13A, E-13B

Professor Tinkham

E-26 Mechanical Engineering Laboratory

For Senior students in the Machine Design course. Experiments in the field of heat power, fluid mechanics, and mechanical properties of engineering materials.

Prerequisites: E-13, E-25

Staff

E-27 Theory of Projection

Since drawing is a graphic language that is universally used by engineers, designers and illustrators to describe a size, a shape or the layout of an object, this course has been developed to provide a basic understanding of the methods used to prepare such drawings.

The course includes orthographic, axonometric, oblique and perspective projection.

Mr. Barylski

E-28 Elementary Heat and Power

A study of the boilers, heaters, pumps, steam turbines and all the necessary auxiliaries and accessories found in a modern power plant. Calculations are made for evaporation, efficiency, boiler rating, fuel consumption, horsepower, etc.

Mr. Barylski

E-104 Mill Engineering

Proficiency in this course depends on the throughness with which the work of the previous courses was carried on. It consists of lectures supplemented by work in the drafting room. Problems in design construction and equipment of textile mills are taken up by the student. Each student must determine the machines and equipment required for manufacturing a certain type of goods assigned to him, and floor plans are made with the machines in their proper positions. The method of generating and transmitting the power, with the type of drive to be used and the necessary horsepower of the motors needed must be determined. Methods of lighting, heating and ventilation, as well as protection from fire are also taken into consideration.

Prerequisites: First three years, Textile Engineering

Professor Holden and Professor Tinkham

DEPARTMENT OF ENGINEERING
DIVISION OF MATHEMATICS AND PHYSICS

M-1 Algebra

Review of high school algebra through quadratic equations. Includes a further study of simultaneous quadratic equations. Includes a study of complex numbers, higher degree equations, inequalities, logarithms, exponential functions, progressions, mathematical induction, binomial theorem and determinants.

Prequisite: Intermediate Algebra
Mr. Sylvia, Mr. Holt and Mr. Gonsalves

M-2 Trigonometry

A study of the functions of the acute angle and the relations among the trigonometric functions. A thorough consideration is accorded the right triangle, the oblique triangle and the important formulas relating to all triangles. Approximately ten hours is spent in studying the use and application of the slide rule.

Prerequisites: Plane Geometry, M-1
Instructors: *Mr. Holt, Mr. Sylvia and Mr. Gonsalves*

M-3 Analytical Geometry

A study of plane and solid analytical geometry, functions and graphs, linear functions, polynomial curves, transformation of co-ordinates, the circle, algebraic and trigonometric curves, parametric equations, polar equation planes and lines, surfaces and curves.

Prerequisites: M-1, M-2
Mr. Sylvia, Mr. Holt and Mr. Gonsalves

M-4A Differential Calculus

A preliminary study is made of variables, functions and limits. Differentiation and the rules for differentiating ordinary algebraic, trigonometric, exponential, and logarithmic terms are introduced.

Prerequisites: M-1, 2, 3
Mr. Sylvia, Mr. Holt and Mr. Gonsalves

M-4B Integral Calculus

A study of integration and the integrating of standard elementary forms. Considers the constant of integration, the definite integral, process of summation, reduction formulas and practical applications.

Prerequisites: M-1, 2, 3, 4A
Mr. Sylvia, Mr. Holt and Mr. Gonsalves

M-5A Differential Equations

A study of ordinary differential equations of the first and higher orders. The practical applications are designed for the engineer and chemist.

Prerequisites: M-4A, M-4B
Mr. Sylvia

M-5B Differential Equations

The use of operators; partial differential equations and boundary conditions. Other fundamental types presented.

Prerequisite: M-5A
Mr. Sylvia

M-6 Statistics

This subject deals with the fundamental statisical measure which are required for the analysis of experimental data, and with the practical applications of statistical analysis to quality control and to the planning of industrial experiments.

Mr. Holt

M-7 Elementary Mathematics

A practical mathematics course which includes high school algebra and geometry. This course enables those who wish to enroll in the degree course to obtain credit for high mathematics.

Mr. Holt

P-1 Physics

A study of heat, heat quantities, heat transfer, expansion, temperature measurement, etc. A thorough study is made of the properties of solids, the gas laws, motion, forces, vector quantities and simple machines.

Prerequisites: M-1, 2, 3, 4A

Mr. Sylvia and Mr. Holt

P-2 Physics

Continuation of P-1 to include a study of electricity including sources and effects of electric currents, the simple series and parallel circuits, measuring instruments, etc. A study is made of the various phases of sound and light.

Prerequisites: M-1, 2, 3 and M-4A

Mr. Sylvia and Mr. Holt

P-101 Industrial Electronics

Construction and capabilities of vacuum and gaseous tubes; basic electronic circuits of a-c and d-c amplifiers, oscillators and rectifiers; industrial photoelectric relays, cathode ray tube applications; electronic control of power equipment.

Prerequisites: M-4A, M-4B, P-1, P-2

Mr. Sylvia

P-102 Industrial Electronics

Continuation of P-101 to include a study of amplifiers as applied to strain gages and of oscillators as applied to high frequency heat treatment units; time delay relays; circuits for pulse, trigger and gate uses as applied in control and measurements.

Prerequisite: P-101

Mr. Sylvia

DEPARTMENT OF ENGLISH

ENG-1 English Composition I & II

Professor Silva

ENG-2 Technical Report Writing

This course is designed to meet the requirements of technical reporting. Its approach is a flexible one: for this reason it is concerned merely with basic principles relating to structure, organization, and effective communication. No attempt is made to establish any standardized forms in technical report writing.

Professor Silva

ENG-3 Business Writing

Attempts to introduce the undergraduate student to the practical features of business letter writing. Stenographic details are touched upon lightly. Extraneous matter is omitted. Main emphasis is placed on the most effective point of view.

Professor Silva

DEPARTMENT OF HUMANITIES

H-1 Economics

This course is designed to assist the student in developing an understanding of the principles of economics and their application in everyday life. Among the topics included are: the nature of production, the arrangement of the productive factors, basic characteristics of capitalism, the organization of business, the problem of business risks, the principles of money, investment and commercial banking, central banking in the United States, fluctuation in purchasing power, the business cycle, price determination, costs of production and international trade.

Professor Sullivan

H-2 General Psychology

An introductory course to assist the student in developing an understanding of the fundamental principles of psychology and their application. Among the topics to be included are: growth and development, motivation, learning, emotion and feeling, intelligence, human adjustment, mental illness, vocational guidance and crime and delinquency. Special attention will be given to the study of the dynamics of mental hygiene and the adjustive process.

Professor Sullivan

H-3 United States History

The aim of this course is to provide the student with a clear overall picture of the history of the United States to the present time. Emphasis will be placed on such topics as: the founding of the National Government, the Civil War, industrialism, expansion, World War I, world depression, the New Deal and World War II. Special attention will be given to the period from World War I to the present.

Professor Sullivan

H-4 Industrial Psychology

A study of the principles of psychology as applied to industry and business. Topics to be included are: individual differences and their nature, job satisfaction, industrial morale, incentive, job analysis, leadership, and supervision, industrial conflict, unemployment, theory of psychological testing in industry, measurement of attitudes in industry, fatigue, accdients, the maladjusted worker and the Hawthorne studies.

Professor Sullivan

H-5 Labor Relations

This course presents labor problems as they are directly related to day-to-day relations of labor and management. The treatment, therefore, is practical rather than theoretical. The course considers (1) the classification of the causes and types of unemployment, (2) the structure of collective bargaining, and (3) the social aspects of labor-management relations.

Professor Sullivan

H-6 Marketing

Products, trade marks, markets, distribution, broker, commission house, advertising, seasons, pricing, market analysis, business policies, price charts.

Text: Lecture Sheets

Professor Giblin

H-7A Modern Language

(German). A basic course in the German Language for scientific purposes. Elementary grammar giving a facility in reading and translating works from German scientific literature.
Professor Fenaux

H-7B Modern Language

(French). Consists of the same matter as H-10B. Deals with scientific French instead of scientific German.
Professor Fenaux

H-8 Sociology

The aim of this course is to aid the student in developing an understanding of the principles of sociology in order that he may live more intelligently and deal more effectively with the social problems of the world about him.

Topics to be covered in the course include, factors in the social life of man, the role of culture, heredity and personality, personality disorganization, group life, suggestibility, status, cooperation, competition, conflict, population distribution and growth, communities, social institutions and social change.

Special attention will be given to some of the current social problems.
Professor Sullivan

H-9 Applied Psychology

A study of the findings of psychologists to the problems of everyday life. Special attention will be given to the problems in the student's field of specialization. Topics to be included are: public opinion and propaganda, consumer and advertising research, selection of advertising appeals, psychology in music and art, psychology applied to mental health, psychology applied to industry, and business, psychology effects of nutrition, drugs, alcohol and tobacco, and psychology applied to crime.
Professor Sullivan

DEPARTMENT OF TEXTILES

DIVISION OF YARN MANUFACTURE

TE-101 Pickers and Cards

Cotton yarn mill machinery. Lists of processes in cotton mills for different numbers of yarn. Proper sequence of processes.

Objects of blending cotton. Methods of mixing same.

Methods of blending and mixing the different types of synthetic fibers.

Bale breakers and opening and cleaning machinery. Picker rooms. Automatic feeders, construction, capacity, and suitability for the purpose intended. Various styles of openers, their use and object. Connection of feeders to openers. The various types of cleaning trunks.

Calculations in connection with openers, breaker pickers, intermediate and finisher pickers, and single process pickers with blending reserve.

Construction of aprons, beaters, bars, screens, fans, lap heads, evener motions, measuring motions, etc. The setting and adjusting of the different parts of these machines.

The revolving top flat card. Its principal parts described, including feed, licker-in, cylinder, doffer, coiler, screens and flats. Different setting arrangements. Calculations in connection with all types of cotton cards.
Clothing, grinding, setting and stripping cards.
No prerequisite
Text: Lecture Sheets
Professor Holden and Staff

TE-102 Cards and Drawing Frames

Study of Cards continued.

Drawing frame roller drafting, setting and calculations. Method of arranging and constructing drawing, frames, its use and objects. Gearing, types of weighing and stop motions. Varieties of rolls.

Prerequisite: TE-101

Text: Lecture Sheets

Professor Holden and Staff

TE-103 Roving and Spinning Frames

Slubbers, first and second intermediates, inter-draft, long draft, roving frames and jack frames. The construction and use of thse machines. Calculations in conection therewith. Changing, fixing and re-setting frames, etc.

The ring spinning frame, its construction and use. Its principal parts, as creels, rolls, rings, travelers, speeds, builder motions, calculations, etc.

Prerequisite: TE-102

Text: Lecture Sheets

Professor Holden and Staff

TE-104 Advanced Calculations and Costs

Figuring the number of doublings and amount of draft required from picker to spinning frames.

Calculations for organization of machinery required for different counts of yarn. Amount of production and cost of production of yarn.

Practice work consists of running work from picker to spinning frames.

Prerequisite: TE-103

Text: Lecture Sheets

Professor Holden

TE-105 Twisters

The object of twisting. Wet and Dry Twisting. The different methods of preparing yarns for twisting. The direction and amount of twist in different ply and cord threads. Size of rings and travelers for the different counts of yarn. Calculations for twist and production.

Prerequisite: TE-103

Text: Lecture Sheets

Professor Holden and Staff

TE-106 Combing

Sliver and Ribbon Lap machines. Construction of the different types of Combers. Methods of setting, adjusting and operation of these machines, and calculations in connection therewith.

Prerequisite: TE-102

Text: Lecture Sheets

Professor Holden and Staff

TE-107 Applied Research

Research as applied to one or more machines consists of running original work, in laying out the machines to be used for the different types of yarns, as regards speeds, weights, etc., from the raw stock to the finished yarn. Tests at the different processes. Methods of testing. Blending and running all kinds of natural and synthetic fibers.

Prerequisites: TE-101, TE-106

Professor Holden and Staff

TE-108 Cotton Classing

Different species of cotton plants. Cultivation of cotton. The different varieties of cotton and the classes of goods for which they are best adapted. Cotton picking, ginning and marketing. The selection of cotton for different classes of goods. Cotton grading and stapling.

No prerequisite.

Text: Lecture Sheets

Professor Holden and Staff

TE-109 Yarn Manufacture

Yarn manufacture is the name assigned to a course of lectures given to the first year students in Textile Technology, the third year students in Chemistry and the first year students in Machine Design, so that they may become acquainted with the methods employed in the manufacture of yarn and cloth. The various machines are thoroughly described and the methods of using them discussed in the lecture room. Because of the limited amount of time allowed for this subject, the students are not taught to operate the machines, but are given an opportunity to examine them at rest and later to observe them in operation.

No prerequisite

Text: Lecture Sheets

Professor Holden and Staff

DIVISION OF WEAVING

TE-201 Yarn Calculations

Methods to establish the Count, Weight, or Length in all the different types of fibers are given with examples. Equivalent yarn numbering systems. New Fiber systems. Suggested system for universal numbering of all yarns.

No prerequisite

Text: Lecture Sheets

Professor Beardsworth

TE-202 Warp Preparation

Spooling or winding — The various types of packaging explained on the machine with respect to cost and manner of usage in the next preparatory manufacturing step.

Warping — High speed warping from cones, and slow speed from spools is taught with the necessary instructions for production and cost figuring. Warping with the silk system.

Slashing — The need for sizing. Methods of sizing. Difference in requirements as to heat, kind of size, and methods of operation with the various kinds of fibers. Cotton methods. Rayon methods. Silk methods.

Prerequisite: TE-201

Text: Lecture Sheets

Professor Beardsworth and Staff

TE-203 Plain Looms

The primary movements required in weaving. Elementary power loom construction. Shedding by cams. Plain cams. Twill and Satin cams. Side cams. Split time cams. Double set cams. Construction of cams for special conditions. Timing of cams and its effect on the cloth. Methods of calculations for gearing of different cam drives. Picking motions.

Bat-wing and cone motions in detail from a practical weaving basis.

Shuttles — Different kinds of shuttles. Woods and other materials used in their

manufacture. Care and treatment of shuttles.

Protector motions

Reeds — Calculations for reeds. Care of reeds.

Take-up motions — Various kinds, with the necessary calculations to insure the greatest range of use.

Filling stop motions of all types.

Temples — The various types and makes and their distinctive features. The operation and maintenance of plain cam looms. Starting of warps. Faults and remedies in weaving and loom fixing.

Discussions on general loom accessories.

Prerequisite: TE-201

Text: Lecture Sheets

Professor Beardsworth and Staff

TE-204 Dobby and Box Looms

Looms with a much greater range of pattern than the cam loom. The dobby shedding machine. Dobby construction, with the timings and settings necessary for correct operation. Single and Double Index. Chain pegging and reading. Box looms. Different kinds of drop box mechanisms. Practical settings, with the best operational methods for the different types. Multiplier motions as applied to box looms. Dobby box looms with special weave mechanisms for such weaves as handkerchiefs, terry and other toweling, curtains, etc.

Prerequisite: TE-203

Text: Lecture Sheets

Professor Beardsworth and Staff

TE-205 Automatic Looms

Draper looms of numerous models. Maintenance, operation, and possibilities of the different models of Draper looms. Practical settings for the feeler and transfer mechanisms. Warp stop motions. Various types of mechanical beam tension control.

Crompton and Knowles multiple box looms, with automatic selective filling transfer. All of the required settings for complete loom operation. Chain building and co-ordination for varied patterns. Stafford shuttle changing looms. All settings for the shuttle changing mechanisms explained in detail.

Student assembly and operation of all the above looms.

Prerequisites: TE-203, 204

Text: Lecture Sheets

Professor Beardsworth and Staff

TE-206 Jacquards

The principle of construction of Jacquard machines. Single and double lift machines. Jacquard machines for special purposes. Principles of harness tying. Layover, Center tie, etc. Care and treatment of harness lines. Practical work in cutting cards and weaving the student's own designs. Double cylinder Jacquard construction and operation with a 4 x 1 automatic box loom and center filling motion.

Prerequisite: TE-203

Text: Lecture Sheets

Professor Beardsworth and Staff

TE-207 Special Mechanisms and Costing

Dobby looms with leno mechanisms for the weaving of all pattern lenos. Requirements and methods for the weaving of lenos on Jacquard looms.

Analysis and application of direct and indirect weave room costs.

Weaving yarn requirements and the preparatory machinery necessary to produce it.

Weave room operation and management under different product, labor, and power conditions.

Room lay-outs best suited to different kinds of product.

Prerequisite: TE-205

Text: Lecture Sheets

Professor Beardsworth and Staff

TE-208 Processing of Synthetic Yarns

This course covers the various conditioning and preparatory process applied to the synthetic yarns which are necessary in the production of synthetic fabrics. These processes include soaking, spooling, throwing, winding, warping and slashing of synthetic yarns.

TE-209 Weaving

This course comprises the fundamentals of the power-loom with particular emphasis on the capabilities of the various types of loom. The student is taught the application of plain, dobby and Jacquard looms with reference to the production of different kinds of fabrics. Limitations as to the use of color, regarding costs in the creation of new woven materials, is a part of the course. The student actually weaves his original patterns on the power looms.

Professor Beardsworth and Staff

DIVISION OF WEAVE FORMATION AND FABRIC ANALYSIS

TE-301 Weave Formation I

Definitions of the words and terms used in designing and analysis. Characteristics of the various classes of fabrics. Design paper and its application to designing and analysis. Cloth structure, with a study of the various sources from which the patterns of fabrics are obtained. Twills. Wave effects. Diamonds. Sateens. Granites. Checkerboards. Rearranged twills. Figured twills.

Mr. Regan and Mr. Molyneux

TE-302 Weave Formation I (Cont.)

Designing for single fabrics continued, such as honeycombs. Mock and imitation lenos. Entwining twills. Spots weaves arranged in various orders. Cord weaves. Imitation welts. Elongated twills. Check effects. Corkscrew weaves. Four change system of designing. Damask weaves.

Prerequisite: TE-301

Mr. Regan and Mr. Molyneux

TE-303 Weave Formation II

Designing for more complicated fabrics, such as figure fabrics, using extra materials. Fabrics backed with extra material. Fabric having the face and back of different material or pattern. Double plain fabrics. Reversible fabrics. Embossed effects, such as Bedford cords, piques, Marseilles weaves.

Prerequisite: TE-302

Professor Beardsworth and Professor Rodil

TE-304 Weave Formation II (Cont.)

Designing for leno, pile and lappet fabrics, such as methods of obtaining leno patterns. Mechanical appliances for the production of lenos, yoke and jumper motions. Bottom doups. Top doups. Check lenos. Jacquard leno-effects. Weaving with wire doups. Weaving with the bead motion. Russian cords. Marquisettes. Full turn lenos.

Pile fabrics, such as velveteens, corduroys, velvets, plushes, carpets, terry toweling.

Prerequisite: TE-303

Professor Beardsworth and Professor Rodil

TE-305 Jacquard Designing

Design paper. How to figure the design paper necessary to reproduce any Jacquard pattern. Defects of Jacquard patterns and how to avoid them. Transferring designs to plain paper. Transferring sketches to design paper. Changing the sley of Jacquard fabrics. Methods of casting out. Ground weaves. Rules for finding sley, pick, warp and filling. Foundations upon which Jacquard patterns are based.

Prerequisite: TE-304

Professor Giblin and Professor Rodil

TE-306 Jacquard Designing II

Different methods of making designs. Sketching original designs by the different methods commonly used. Working out the sketches upon design paper. Cutting cards on the piano card-cutting machine. Card lacing. Weaving of at least one original design. Method of weaving Jacquard leno designs. Mechanisms required in weaving Jacquard lenos. Making Jacquard leno designs.

Harness tying. Various systems of tying Jacquard harnesses. Lay-over ties. Center ties. Compound ties.

Prerequisite: TE-305

Professor Giblin and Professor Rodil

TE-307 Color

A study of the theory and facts of color so that the student of textile courses can understand the use of and the performance of colors when applied to fabrics. The course includes hue, value and chroma scales; complementary colors, color harmony and color effects.

Professor Giblin and Staff

TE-309 Fabric Analysis I

Standard methods of representing harness and reed drafts. Harness drafts on design paper. Written harness drafts. Chain drafts. Layout plans. Finding weight of warp yarns, weight of filling yarns. Yards per pound of cloth.

Professor Pacheco

TE-310 Fabric Analysis I (Cont.)

Finding counts of warp and filling by various methods. Finding yards per pounds of cloth from a small sample by weighing. Making original designs and weaving them on the power loom. Reproduction of woven samples.

Prerequisite: TE-309

Professor Pacheco

TE-311 Fabric Analysis II

Analyzing more difficult samples. Methods of analysis on various rayon fabrics. Finding average counts. Percentage of each material. Production of loom. Price per yard for weaving. Weaving of more difficult original designs.

Prerequisite: T-310

Professor Giblin and Staff

TE-312 Fabric Analysis II (Cont.)

Analysis of leno fabrics, making both written drafts and harness drafts on design paper. Chain drafts. Weaving of original leno designs. Changing the construction of fabrics and preserving balance of structure.

Prerequisite: TE-311
Professor Giblin and Staff

TE-313 Fabric Analysis III

Analysis of more difficult samples continued. Methods of analysis of various rayon fabrics. Finding average counts. Percentage of each material. Production of loom. Price per yard for weaving. Weaving of more difficult original designs.

Prerequisite: TE-312
Professor Giblin

TE-314 Fabric Analysis III (Cont.)

Continuation of the work outlined in TE-313. Weaving of students' original Jacquard designs. Work on cost of manufacturing fabrics.

Prerequisite: TE-313
Professor Giblin

TE-315 Styling

Study of common fabrics. Application of cloth analysis to the requirements of a converter or of a commission house.

Methods of ascertaining counts of warp and filling; also sley and pick for new fabrics.

Determining use of colored yarns in striped and figured fabrics with relation to cost of dyed yarns and woven colored patterns.

This is a continuation of analysis. Changing the construction of fabrics. Making sketches for alteration of fabrics. Finding cost of fabrics.

Prerequisite: TE-314
Professor Giblin

TE-316 Fabric Classification

A study of characteristics of a wide range of staple fabrics made of cotton, wool, rayon, silk, nylon, orlon, azlon, glass and other fibers. In this subject, the student is supplied with samples of the various materials together with the information pertaining to their characteristics such as construction, composition, weave, performance and uses. At the conclusion of the subject, the student has a notebook containing about 300 samples of staple cloths and the data applying to each sample.

Professor Giblin

TE-317 Hand Loom Weaving

The hand loom, its construction and use. Harness drafts as affecting the weave. Building harness chains. Practice on the hand loom in weaving fabrics from original and other designs, and putting into practice the designing lessons.

Prerequisites: TE-301 and 302
Professor Rodil, Mr. Regan and Mr. Molyneux

TE-318 Retailing

This subject is included in the girls' course to give the student, who desires to make use of her textile training in a career within the field of retailing, a knowledge of the principles of retailing. Buying and merchandising are stressed. A study of the data to use in composing labels for merchandise to conform with an informative selling program is made.

Professor Giblin

TE-319 Introductory Survey of Textiles

An introductory course designed to familiarize the student with elementary and non-technical phases of the textile industry. A study of the definitions of the common terms used in manufacturing and finishing of textiles. Properties and characteristics of the common natural and man made fibers. Flow-charts of the principal fibers, from raw stock to finished fabric.

Professor Giblin

TE-320 Introductory Textiles

This course is designed for the purpose of indoctrinating Freshmen of Textile major courses in the non-technical phases of the textile business. It gives the student an elementary understanding of yarn and fabric production, origin of materials, and use and performance characteristics of various textile materials.

Professor Giblin and Staff

DIVISION OF PHYSICAL TESTING

TE-351 Physical Testing

Moisture — Relative humidity, regain, moisture content determinations and their effects on textile materials from a weight and testing viewpoint.

Analysis of fabrics for type, construction, yarn sizes, weight and identification of natural and synthetic fibers, with most work being done from small swatches of fabric. Analysis of fiber blended fabrics for type and percent of mixtures. Physical test on fabrics for tensile strength, weight, bow, crimp, tearing resistance, finishing materials, water repellancy, shrinkage and abrasion.

Physical tests on spun and continuous filament yarns with special emphasis on various twist, constructions, weight (number), breaking strength (skein and single end), grades (quality), and methods of determination.

Mr. Beck

TE-352 Physical Testing

Cotton Fiber Techonlogy — Length arrays by the Suter-Webb fiber sorter and the Fibrograph. Fiber tensile strength by the Pressley flat bundle method. Fineness and maturity.

Testing Project — The student is assigned a testing project on a series of fabrics which consist of testing for comparative purposes. Results are evaluated and presented in thesis form.

Advanced analysis and evaluation of complex blends of natural and synthetic fibers.

Mr. Beck

TE-353 Physical Testing

Moisture — Relative humidity, regain, moisture content determinations and their effects on textile materials from a weight and testing viewpoint.

Cotton Fiber Technology — Length arrays by the Suter-Webb fiber sorter and the Fibrograph. Fiber tensile strength by the Pressley flat bundle method. Fineness and maturity.

Physical test on spun and synthetic yarns, including weight (number), twist, combinations yarns, breaking strength (skein and single end), yarn evenness, grades (quality), and their determinations.

Physical tests on fabrics for construction, dimensions and weight, tensile strength (grab and strip), crimp, bow, finishing materials, fiber composition and blends, water repellancy, shrinkage, abrasion and wear resistance.

Presentation of data. Statistical analysis and preparations of control charts.

Mr. Beck

TE-354 Physical Testing

Moisture — Relative humidity, regain, moisture content determinations and their effects on textile materials from a weight and testing viewpoint.

Physical tests on fabrics for construction, dimensions and weight, tensile strength (grab and strip), crimp, bow, finishing materials, fiber composition and blends, water repellancy, shrinkage, abrasion and wear resistance. Sample analysis from small swatches. Blends.

Mr. Beck

TE-355 Microscopy

A course of study in the use and manipulation of the microscope, elementary optics as applied to the microscope, illumination and accessory equipment and its uses.

Micrometry and measurement techniques and the calibration and use of the different types of ocular micrometers.

Specimen mounting and identification of all various textile fibers. Cross sectioning by several methods with emphasis on the use of the fiber microtome.

Recording Data — Written records, drawing from observation and camera lucida. Photomicrographic apparatus and photomicrographic and dark room technique including adjustment of apparatus, lighting and photographing specimens.

Analysis of fiber blended fabrics for identification and percent of various fibers. Wool grading by the micron diameter method. Denier determination of cut staple synthetic fibers and other special uses of the microscope to the textile technologist.

Mr. Beck

TE-356 Photomicroscopy

The use of photomicrographic apparatus and photomicrographic and dark room techniques including adjustments of apparatus, lighting and photographing specimens. Includes work on fabric, yarns, fibers, and all types of textile specimens. Students are assigned lengthy project and are left to their own initiative.

Prerequisite: TE-355

Mr. Beck

TE-357 Fibre Technology

An illustrated lecture course on the basic and outstanding microscopic characteristics and physical properties of the various textile fibers. Microphotographic slides of all fibers discussed are used as illustrations; technical data is presented and discussed. The ribers included represent selected specimens of the natural vegetable fibers, the natural animal fibers, the regenerated rayons, the prolons, the synthons, and the mineral fibers.

Mr. Beck

DIVISION OF KNITTING

TE-501 Elementary Knitting

A study of the various types of winding machines used for cotton, wool and synthetic yarns preparatory to running on hosiery knitting machines.

Professor Cloutier

TE-502 Hosiery Manufacture (Preliminary Operation)

Lectures in manufacture of knitted fabric, care of yarn prior to knitting, care of looper, backseaming and sewing machine. The correct way of boarding, inspection, pairing, marking for identification, folding and boxing, and the care for quality and efficiency.

Professor Cloutier

TE-503 Circular Knit Hose

A study of circular hose and half hose, ribbers for tops, transfer half hose, full half hose, reverse wrap, and Links & Links half hose, the full hose, mock seam and plain.

Professor Cloutier

TE-504 Warp Knitting

A study of stitch pattern design, warp design, quality finishing, warping, treading and timing in both classes of machines, spring beard and latch needle machines, including Cidega or creel knitting machine, its fabric designing and operations.

Professor Cloutier

TE-505 Circular Body Knitting

The study of single needle jersey and two needle rib knit, sweater and underwear, including Jacquard machine.

Professor Cloutier

TE-506 Needle & Segment Upkeep

A study of the complete segment that comes in contact with the fabric such as needle, sinker and divider; care and upkeep for quality; definition of gauge for all machines.

Professor Cloutier

TE-507 Full Fashion

The study of knitted material to be applied to various styles of garments, fabric pattern layout and the cutting for garment trade.

Professor Cloutier

TE-508 Hose Manufacturing I

A study of all operations after the hose is produced from machine, looping, backseaming, inspecting for quality and packaging.

Text: Lecture Sheets

Professor Cloutier

TE-509 Hose Manufacturing II (Final Operation)

The study of full fashion hose in styling, cost finding, and construction of hose. The operation of machine and clinic for defects in machine and hose.

Text: Lecture Sheets

Professor Cloutier

TE-510 General Construction of Knit Machines

A special series of lectures for the students in the Machine Design course for parts identification and construction. Includes the steps of sub-assembling machines.

Text: Lecture Sheets and Manufacturers Literature

Professor Cloutier

DIVISION OF TEXTILE DESIGN AND FASHION

TD-101 Design

Design has to do with the stimulation of the creative mind and the development of creative ideas. The problems are diverse and numerous and the student works entirely on his own in two and three dimensions. The basic elements of design: line form, space, value and color are exploited and the results are analyzed, discussed and criticized.

Miss Allen

TD-102, 103, 104 Textile Design

Includes the creation of both woven and printed fabrics for reproduction by the process of silk screen printing, block printing, roller printing or weaving. This course joins courses in silk screen printing and handloom weaving for the actual application of the designs.

Miss Allen

TD-105 Nature Drawing and Painting I

In the first year this course is concerned with the study of natural specimens as a source of design and pattern. Good design is stressed in the make-up of the plates and color is also an important consideration. Specimens are examined and recorded to be used as reference material. First year students work primarily in colored pencil and with pen and ink, while second year students utilize many mediums such as watercolor, tempera, and scratchboard.

Miss Allen

TD-106 Drawing

This course involves not only life drawing which makes up the major portion of the course work, but also interior, landscape and still life drawing as well.

Miss Allen

TD-107, 108 Life Drawing

This course is a continuation of TD-106 (Foundation Drawing) with additional study of anatomy and further working from the model.

Miss Allen

TD-109 Lettering

Lettering is taught from the standpoint of design. The evolution of letter forms and their development from skeletons to built-ups is studied along with the influence of tools on the character of alphabets. Students are taught to, use lettering correctly and effectively.

Miss Allen

TD-110 Nature Drawing and Painting II

A continuation of TD-105.

Miss Allen

TD-111, 112 Art History

This course, Art History, is coupled with art appreciation to give the student a broader understanding of, and a sensitivity for, cultures of the past, the present, and the future. The design of artifacts from other cultures is also of importance to the design student. Frequent visits to museums of art are included in the course.

Miss Allen

TD-113, 114 Handloom Weaving

This course gives the student the opportunity to get back to the basic principles of weaving and experiment with many combinations of materials in order to seek new textural effects which can be reproduced on the power loom.
Professor Giblin

TD-115 Fashion Illustration

Proportion and design in sketching the style figure, with relation to fashion. Consideration of fabric texture in actual and imaginative development of costume.

TD-116 Fashion Illustration (Advanced)

Sketching from fashion models in changing poses. Development of originality by sketch presentation. Advanced creation of student visual interpretations in presenting apparel and accessories, stimulated by fabric textures and use of color.

TD-117 Fashion Fundamentals

A survey of periods, sources, and individuals with relation to their influence upon fashions. Cycles and developments in style and fashion. Study of the work of outstanding clothing designers.

TD-118 Pattern Drafting

A study of the fundamental principles of trade procedures in pattern drafting and draping. Work in the construction and use of basic patterns is followed by advanced methods and use of personal measurements in pattern drafting. Standard patterns are compared to the student's creations.

NEW BEDFORD TEXTILE INSTITUTE

CALENDAR

Day Classes

1953

September 10, Thursday, 9 A. M.	Freshman Registration
September 11, Friday, 9 A. M.	Freshman Orientation
September 14, Monday, 8:30	First semester begins
September 28—October 1, Monday-Friday	Class elections
October 12, Monday	Columbus Day — Holiday
November 11, Wednesday	Armistice Day — Holiday
November 25, Wednesday, 12 M.	Thanksgiving recess begins
November 30, Monday, 8:30 A. M.	Thanksgiving recess ends
December 18, Friday, 3:40 P. M.	Christmas recess begins

1954

January 4, Monday, 8:30 A. M.	Christmas recess ends
January 18, Monday	Mid-year examinations begin
January 29, Friday	Mid-year examinations end
February 1, Monday, 8:30 A. M.	Second semester begins
February 22, Monday	Washington's Birthday — Holiday
March 26, Friday, 3:40 P. M.	Spring recess begins
April 5, Monday, 8:30 A. M.	Spring recess ends
April 16, Friday	Good Friday — Holiday
April 19, Monday	Patriots' Day — Holiday
May 24 — June 2, Monday to Wed.	Final examinations
May 30, Sunday, 2 P. M.	President's reception
May 31, Monday ————	Memorial Day — Holiday
June 4, Friday 8 P.M.	Commencement exercises

Evening Classes

1953

September 25, Friday, 7:30 P. M.	Enrollment
September 28, Monday, 7:30 P. M.	First term begins
October 12, Monday	Columbus Day — Holiday
November 26, 27, Thursday, Friday	Thanksgiving recess
December 14-18, Monday-Friday	Examinations
December 18, Friday	First term ends

1954

January 4, Monday, 7:30 P. M.	Second term begins
February 22, Monday	Washington's Birthday — Holiday
March 22-26, Monday-Friday	Examinations
March 26, Friday	Second term ends

Day Classes

1954

September 9, Thursday, 9:00 A. M.	Freshman Registration
September 10, Friday, 9:00 A. M.	Freshman Orientation
September 13, Monday, 8:30 A. M.	First semester begins
September 27-Oct. 1, Mon.-Friday	Class elections
October 12, Tuesday	Columbus Day — Holiday
November 11, Thursday	Armistice Day — Holiday
November 24, Wednesday, 12 M.	Thanksgiving recess begins
November 29, Monday, 8:30 A. M.	Thanksgiving recess ends
December 17, Friday, 3:40 P. M.	Christmas recess begins

1955

January 3, Monday, 8:30 A. M.	Christmas recess ends
January 17, Monday	Mid-year examinations begin
January 28, Friday	Mid-year examinations end
January 31, Monday, 8:30 A. M.	Second semester begins
February 22, Tuesday	Washington's Birthday — Holiday
March 25, Friday, 3:40 P. M.	Spring recess begins
April 4, Monday, 8:30 A. M.	Spring recess ends
April 8, Friday	Good Friday — Holiday
April 19, Tuesday	Patriot's Day — Holiday
May 23-June 1, Mon.-Wed.	Final examinations
May 29, Sunday, 2 P. M.	President's reception
May 30, Monday	Memorial Day — Holiday
June 3, Friday, 8 P. M.	Commencement exercises

Evening Classes

1954

September 24, Friday, 7:30 P. M.	Enrollment
September 27, Monday, 7:30 P. M.	First term begins
October 12, Tuesday	Columbus Day — Holiday
November 11, Thursday	Armistice Day — Holiday
November 25, 26, Thursday, Friday	Thanksgiving Recess
December 13-17, Monday,-Friday	Examinations
December 17, Friday	First term ends

1955

January 3, Monday, 7:30 P. M.	Second term begins
February 22, Tuesday	Washington's Birthday — Holiday
March 21-25, Monday-Friday	Examinations
March 25, Friday	Second term ends

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